

TECHNOLOGY DEPT.

MOTOR TREND

**NEW
V8 ENGINES
FOR '55**

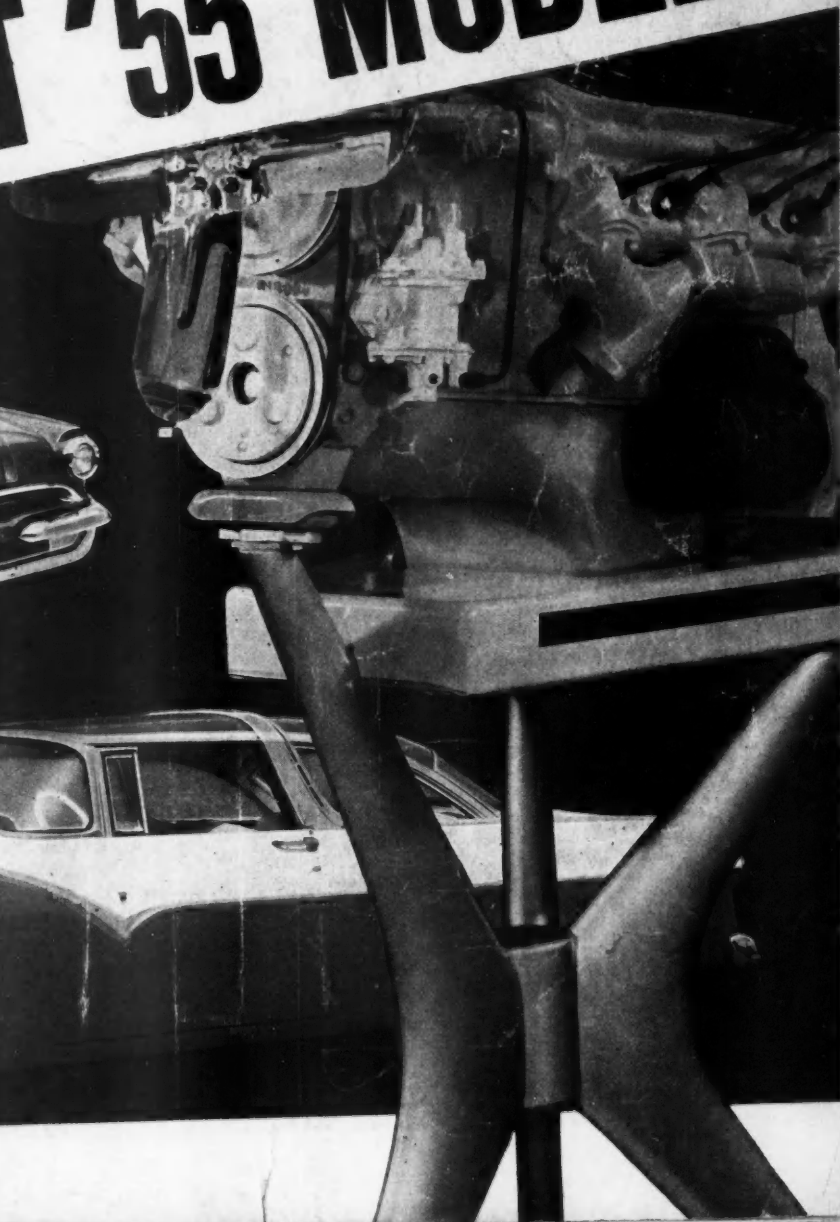
FUBLIS DECEMBER 1954 25c

NOV 1 1954

DETROIT

SPOTLIGHT ON DETROIT

NEWEST '55 MODELS



How Researchers Solved

Detroit's Biggest Problem

...their ingenuity may make your present engine last years longer and save you hundreds of dollars in repairs.

THEORETICALLY, YOUR ENGINE should never wear out, because the moving parts never touch each other. They're always separated by a thin film of oil. The problem is to keep abrasive particles out of that thin film of oil. That problem has become tougher every year since the Model T, as engine clearances have become finer and speeds higher.

Today, abrasive particles comparable to the thickness of the ink on this page may do hundreds of dollars of damage to your engine!

Because hot oil, under pressure, often forces "channels" in rag or paper filter packs, these abrasives get through. That's why a team of researchers developed a new material for oil filters: porous bronze.

This new filter material is made of millions of microscopic balls fused together. No amount of oil can force a channel in it. No dangerous abrasive particles can get through. It doesn't soak up valuable oil additives as absorbent filters do. *And you never change it!* You simply rinse it in gasoline and keep on using it for 10,000, 100,000 and more miles of driving. It's called the Life-Time filter.

The cost? About the same as a couple of throwaway filter packs. In addition to saving the cost of filter pack replacement, you save the quart of oil soaked up and thrown away with ordinary filter packs and — most important — you save money on engine repairs by filtering out dangerous abrasives.



Permanent Filter Division, Dept. FM-12
CONTINENTAL MANUFACTURING CORP.
Washington Blvd. at Motor Ave., Culver City, Calif.
Ship ☐ complete unit for _____

_____ make, model, year of car

☐ conversion kit for _____
_____ make and number of present filter

I enclose ☐ \$12.95 for complete unit (\$18.95—chrome)
☐ \$6.95 for conversion kit (full-flow, \$13.95)
☐ \$2.00 deposit; send C.O.D.

Name _____

Address _____

City _____ Zone _____ State _____

Evolution of Bronze Filter Design

1. "Tin Can"



2. Rigid Cone



1. First crude attempts to design a bronze filter simply imitated the shape of the ordinary throwaway pack. Because of its basic structural weakness and the danger that sediment packing between the element and the case might critically reduce oil pressure, all attempts to "improve" this design were abandoned, even though it was relatively cheap to manufacture.

2. After considering almost every geometric shape, the cone was selected as the most rigid and was used for the Life-Time filter. This design also allows the sediment to drop to the bottom of the case, clear of the element. It has withstood the ultra-sonic vibration test and the 100G shock test. Only the Life-Time filter uses this exclusive cone design; it is fully protected by patents.

HOW TO GET A LIFETIME FILTER FOR YOUR CAR

Try the Lifetime filter on your car for 2 weeks: if it isn't all I say, you get your money back; if you keep it, you're through buying filter packs—the Lifetime filter is guaranteed for 10 years, actually will last many times that long.

For complete unit, including case (fits any car), send make, year and model of your car and \$12.95 (we pay shipping).

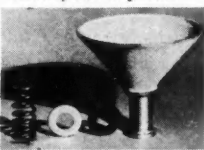
Conversion kit, which replaces your present filter pack with Life-Time bronze, is \$6.95 for most cars (send make and number of present filter when ordering). Conversion kits for Buicks with hydraulic lifters and for cars with full flow systems: \$13.95.

Or send only \$2 deposit, pay C.O.D. charges on arrival. But do it today—don't waste another cent on filter pack replacements!

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Complete Lifetime Filter; fits any car.



Lifetime Conversion Kit; replaces ordinary packs with permanent bronze element.

OPPORTUNITY FOR DEALERS AND DISTRIBUTORS

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The one for the road!



And we mean road . . . for Chevrolet's Corvette is tailored-to-measure for real drivers . . . for those of you whose hearts find a singing lift in the challenge of a winding highway, the call of far blue horizons.

Stay away from this slim temptress unless there's a spark in you that burns bright to the glove-fit of a bucket seat . . . to the competent feel of a big 17¼-inch steering wheel . . . to the tingling delight of a car that moves with the cat-quick response of a boxer.

Stay away if your pulse doesn't stir to the silken potency of Corvette's "Blue-Flame" engine, fueling 150 horses through triple carburetors . . . if your heart doesn't soar to the speed-sculptured lines of its sleek plastic body . . . the rake of its fighter-plane windshield.

But if you're a real driver you can't stay away. You'll want to slice through a tight S-turn for the sheer joy of discovering what geared-to-the-road stability means. You'll want to be behind the wheel when the light turns green . . . and the special Powerglide automatic transmission sends you winging, far ahead of the pack. You'll want to tramp on those truck-size brakes for the wonderful feel-

ing of security when the Corvette comes smoking down to zero m.p.h. in a dead true line.

But why are we talking when we should be driving? There's a Corvette waiting at your Chevrolet dealer's. The key's in the ignition—and adventure awaits the touch of your toe!

One word before you set out on this date with delight: The Corvette is a *practical* sweetheart. The full measure of Chevrolet's engineering skill was poured into the design of this All-American sports car . . . with all that means in convenience, durability and luxury. Plus this: Swift and experienced service is no farther away than your nearest Chevrolet service department. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.



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DECEMBER 1934

Published Monthly

VOL. 6 • NO. 12



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Motor Trend

EDITORIAL

The '55 Cars and You

DETROIT IS SEETHING with new car information. Decisions are being made . . . remade . . . and broken . . . all within hours. It's a fantastic period that's coming up. Never has there been anything like it in years—surely not since the war.

The completely new styling and new engineering of so many cars is being viewed with mixed emotions by members of the press and the auto industry. Some feel that it can lead to nothing but cut-throat competition. Others view it as being food for more sales. Still others think that with so many new cars being put onto the market, anyone who can possibly scrape up the money will plunk it on a '55 model.

There's certainly reason for some individuals to feel the way they do about this upcoming year. But the way we look at it, a year in which almost every car will have a body change of sorts, and many will have totally new engines, pre-sages nothing but a wholesome thing for consumer and producer alike.

First of all, the auto business as a whole is being viewed with considerably more optimism than before. And trite as it may sound, "as goes the auto industry, so goes [the economy of] the country."

As for the individual, he'll have a better selection than he's had in many years. Having started on this pattern, the manufacturers will continue to provide new and unusual features on their cars, making them noticeably better each year. Even so, the cars will still have to be sold.

Some of the clues to Detroit's selling philosophy may lie in the following statements: By James J. Nance, President of Studebaker-Packard Corp., "Next year will be a free-for-all, and our chances in that kind of market will be good." By Ivan Wiles, General Manager of Buick, "Cars are no longer being bought as replacements alone . . ." By W. Fish, General Sales Manager for Chevrolet, "A man's investment that's second only to food and shelter is his car."

Other executives have been quoted as saying that if the pattern of the past is continued, new cars will still be desired by many persons who have never owned

new cars before, that the population growth creates demand, that the two-car trend is growing rapidly because of the steady movement to suburbs, and that shorter working hours provide more time for car travel. Surveys show that since 1941 there are five million more one-to-three-year-old cars on the road.

This is certainly indication enough that manufacturers are out to sell their cars to as many persons as are able to buy them. Whether you can or not is up to YOU.

In the weeks and months following, you will be bombarded with news about the new cars. Through the pages of MOTOR TREND we'll tell you about them as soon as possible—by word descriptions, photographs, driving impressions, full-scale road tests. It will be difficult (to put it mildly) for you to decide which car is best. But, if you're in the market, the decision as to which car is best is not nearly so hard as deciding which one is best for YOU.

To avoid a hasty decision, don't base your selection on horsepower alone, despite the emphasis on this figure. As you'll note with this issue, manufacturers are announcing fantastic horsepower increases. It's a well-known fact that horsepower has come to connote power . . . and consequently, speed. But, it's a lesser-known fact that it also sometimes means better fuel economy. Neither of these rules, however, is necessarily so.

As was pointed out to us recently by a chief engineer of one of the Big Three, "I could lower the horsepower on our cars and give you better performance. There's more to performance than just horsepower." A check of our performance figures of last year seems to bear this out. In some cases, the highest horsepower car is the fastest accelerating, has the highest top speed, or is the most economical. *But in no case is it all three.*

Performance is more than horsepower. It's a question of how much horsepower gets through the transmission and drive train, to the rear tires, applied to the road surface. It's wrapped up in gear ratios, and car weights. It's all a part of how efficiently the car uses its horsepower.

Horsepower, *per se*, is not enough.

MOTOR

TREND Subscription Dept.

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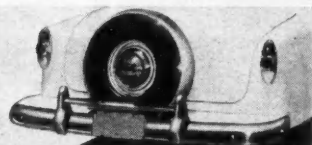
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is one of the big reasons for subscribing to MT. Another is the

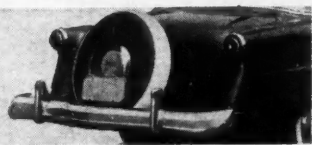
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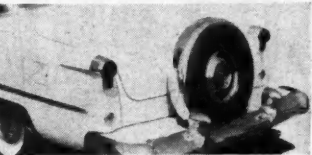
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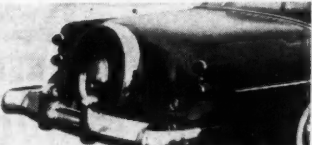
Genuine Continental Kit for '49-'54 Chevrolet. (reg. price \$69.50) **SPECIAL \$42.85**



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Oldsmobile '53-'54, '88', '98'



Buick '54 Super, Roadmaster, Century and Special

All wheel kits and tire covers are constructed of heavy gauge steel and come complete with mounting bracket, bumper extension, stone deflector, misc. hardware, trim welt and mounting instructions.

MAKE	REGULAR PRICE	DISCOUNT PRICE
'52-'53-'54 Mercury	150.00	84.75
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'53-'54 Oldsmobile '98' '88'	175.00	94.75
'52-'53-'54 Lincoln	175.00	94.75
'53-'54 Plymouth	145.00	84.75
'53-'54 Dodge	145.00	84.75
'54 Cadillac	145.00	104.75
'53-'54 Pontiac	145.00	84.75

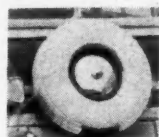
Kits are complete in prime paint, Chrome Tire Cover Rim Optional, additional \$15.00. Specify model car and tire size.

This functional metal tire cover is designed to fit all 15 and 16 inch wheels. Specify tire sizes. Constructed of quality heavy gauge steel. (reg. price \$14.95.)

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**Checks engine performance
on-the-road—Shows how to
save gas, avoid repair bills!**

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Get it at your dealer's. If he cannot supply you, send us his name and address with your check or money order for \$10.95. Motor Minder will be sent prepaid!

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Glove Compartment

AT THE FIRST NATIONAL RALLY of Lincoln Continental Owners, held in Greenfield Village, Mich. (on the grounds of the Ford Motor Co.), Lincoln Continentals assembled in one group than ever before—with the possible exception of when they were first built (starting in 1939). After a rally, parade through downtown Detroit, and concours, all members assembled in Lovett Hall in Greenfield Village to hear some remarks from their president, Elliston Bell, and the following exciting words from William Clay Ford, youngest brother of the Ford family: "Ever since 1948, we've been receiving requests that the Continental be resumed. Now it gives me great pleasure to announce that we've designed a new Continental, and will have a plant for building it. Public introduction will be sometime in 1955. It will be a custom-built automobile in every sense of the word, and will be definitely recognized as a Continental. Because of my special interest in this car, I am happy to announce that I will head up this new organization, which henceforth will be called the Continental Division."

AUTO MANIACS OF AMERICA, the all-hobby auto club, now features one of the leading motor hobbies of today—that of collecting automobile literature. This interesting pastime attracts car restorers, auto historians, and literature "bugs" alike; and to further aid its members, Auto Maniacs now supply a wide variety of the new U.S. and foreign literature to them.

The club has recently started publication of second edition catalogs, including the 1930 Jordan Great Line 90 series and the 1933 SV-16 and DV-32 Stutz autos. For information regarding this nonprofit club, write Harold L. Mayer, Executive Secretary, Auto Maniacs of America, Inc., Stockbridge, Mich.

DEALER SERVICE, beef of many a new-car buyer, is no problem for at least one DeSoto-Plymouth dealer. *Automotive News* reports that one specific mechanic is assigned to each car for its entire warranty period, and has full responsibility for it.

The mechanic receives a flat rate for servicing the car before delivery; when a customer returns for a checkup, the assigned mechanic services the car. If the dif-

ficulty is traced to the mechanic's unsatisfactory pre-delivery service, he must make all repairs on his own time. Consequently, in this dealer's case, almost all pre-delivery mechanical difficulties have been eliminated.

This sounds like an important step in MT's crusade for better dealer service.

IF YOU or a member of your household is a teen-ager, you may be interested in the 1955 Fisher Body Craftsman's Guild model car competition, entries for which are being accepted now. Besides regional prizes, the first four national winners in both the Junior (12 through 15 years old) and Senior (16 through 19) divisions receive university



With the top car are (l. to r.) Don MacDonald; John Daly, ABC veej; owner N. Andrews, and William Clay Ford

scholarships ranging in value from \$1000 to \$4000. If you don't need or want this scholastic aid, the money will be held in trust for you until your 25th birthday. Your model can represent any body type you choose, including sports cars and station wagons, and all entrants receive a textbook giving step-by-step building instructions. Write Jim Fuson, Fisher Body Craftsman's Guild, General Motors Building, Detroit 2, Mich., for an official enrollment card. Hurry, though; your model must be built and on its way to the judges by midnight, June 1, 1955.

ONE OF GEORGE ROMNEY'S first acts after assuming the Presidency and Board Chairmanship of American Motors was to spike recurrent rumors of merger between his company and the newly formed Studebaker-Packard Corp. He said in part: "... there have been no merger discussions between S-P and American, and there are none now [October 13] of a direct or indirect nature. . . . American Motors is already a widely diversified company whose breadth has been expanding constantly. As a result, our growth, prosperity, and future do not depend upon a further merger with any auto company. . . ."

With the exception of the Ford brothers, Mr. Romney at 47 is the youngest chief executive in the industry. He was groomed for American's top spot by the late George W. Mason, whose realistic formula for on-the-job training in this instance meant eight years shuttling between all major departments, with coveralls as required dress most of the time. (Continued on page 9)

Motor Trend

\$1,000 Reward
to anyone who can
disprove this claim:

The only battery with all these:

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CADMIUM ALLOY GRIDS
SELF-LEVELLING DEVICE
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to prevent accidental
damage to plates

**10 YEAR GUARANTEE BONDED BY
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WHY WE CAN MAKE THIS SENSATIONAL OFFER

There's no trick to it (nor to the Life-Long 10 Year Guarantee) ... the Life-Long Battery actually possesses tremendous recuperative powers, as proved in hundreds of experiments and independent laboratory tests.

The Life-Long is no ordinary battery—it's the outgrowth of European long-life type batteries that have been operating day in and day out for 30 and 40 years! The Life-Long Battery too is literally built to outlast your car, outperform all other American batteries.

**UP TO 2000 AMPS instant power output,
300% GREATER CAPACITY**

**WORLD'S LARGEST
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LIFE-LONG BATTERIES!**

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PURCHASING DEPT.



Life-Long Battery Mfg. Corp.
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Gentlemen:

As you may well know, the greatest maintenance problem and expense to a taxicab company is the battery. Batteries in our fleet of cabs receive a terrific punishment because they are charged up all day long and continually drained all night long. A top grade battery will last us 6 months. However, during a mild season, or in a warmer area, we have had as much as 9 or 10 months use.

Our company has investigated and discussed using the LIFE LONG BATTERY ever since seeing the first articles in Readers Digest Magazine. We decided that such a battery, even if it were much more costly, would be cheaper in the long run. But we were pleasantly surprised when we learned that your new production facilities brought the price down to that of ordinary batteries. Our original test Batteries have given us over 400% greater service than our ordinary old type batteries, and are still in daily use. With no signs of weakening.

We are happy to inform you of our immediate decision to equip all our YELLOW CABS with your LIFE-LONG BATTERY.

Very truly yours,
Wally Strick

DISTRIBUTOR-DEALER TERRITORIES STILL OPEN

Protected Distributor or Dealer franchises are being awarded to interested people. Those who already own franchises are earning excellent profits as more and more car-owners learn about the Life-Long 10 Year Battery. We invite your inquiry by telephone, telegram or letter. Minimum investment in inventory. Because territories are going fast, we urge you to act now.

**LIFE-LONG
10 YEAR BATTERY**
recuperates
in 1 minute!

Ever leave your car lights burning 'til your battery was completely run down? Then you know what you'd have given for a battery that would recuperate almost instantly.

Here's a simple test you can make to prove to yourself the amazing recuperative power of the Life-Long Battery. We'll pay anyone \$1000 cash if he can prove to us that a new Life-Long Battery won't pass this test:

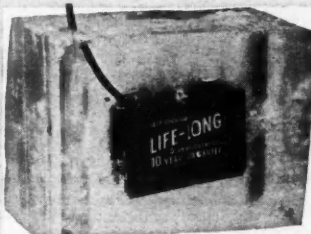
**YOU CAN MAKE
THIS TEST**

**TREMENDOUS
RECUPERATIVE
POWER**

Install the Life-Long in your car the same as any other battery. With the ignition switch off and the headlights on, step on the starter until the battery is so run-down it won't crank the engine, light the lights, or even blow the horn! Now wait one minute with headlights switched off, then step on the starter. The Life-Long Battery will start your engine instantly with a surge of power it has regained during that sixty second interval!

This proves the Life-Long's tremendous ability to recuperate. One of the Life-Long salesmen has made this demonstration over 500 times with the same battery. There is to date, no noticeable decrease in his battery's efficiency.

Right: Life-Long Battery is unaffected by being completely frozen in ice for days! A Life-Long Battery was tested at 70° below zero and still delivered full power.



DON'T JUDGE BY THE PRICE! Now you can buy a Life-Long Battery for your car or truck at the cost of an ordinary battery. No need to pay 2 to 5 times the usual cost of a battery to get Life-Long performance!

LIFE LONG

BATTERY MANUFACTURING CORPORATION

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Los Angeles 64, California
Cable: LIFELONG

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Please ship Life-Long Battery,
with 10-year guarantee:

- ☐ 6 volt automotive battery
(\$29.95 including tax)
☐ 12 volt automotive battery
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Cash, check, or money order enclosed; Life-Long pays
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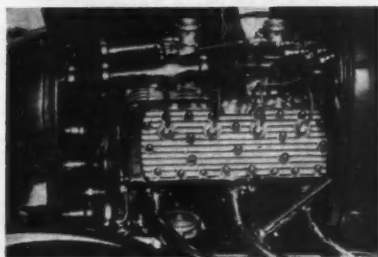
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CITY _____ ZONE _____

STATE _____

for _____
Make & Model, Year of Car

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AND LIVE" CARS...
TURN YOUR HOBBY
INTO A CAREER!**



**Get America's Big-time, Big-future
AUTO MECHANICS
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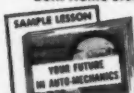
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Letters

BEAUTY IS AS BEAUTY DOES

Gentlemen:

Occasionally you mention shoddy finish work as it appears in a new car, but even more important to me is how that finish is likely to look after a car is over a year old. I think most car owners will agree that no design maintains its attractiveness when the exterior finish begins to deteriorate. Over the life of a car the most important single appearance feature seems to be the finish. Why then devote numerous references to the tasteless and ubiquitous chrome embellishments which each buyer can't avoid seeing and evaluating for himself and ignore the durability of general finish which is difficult for a buyer to ascertain until it is too late?

R. N. Servaas

Grand Rapids, Mich.

THE MAGIC NAME . . .

Gentlemen:

Is Roger Huntington so overawed by the magic (?) name of Cadillac (Oct. MT, page 48) that he won't give credit where credit is due? The "Safety Stutz" of 1926 had safety glass all around, the kind with wires in. The 1929 Series M Stutz and Series L Blackhawk had the kind without wires.

Shame on you, **MOTOR TREND**; you owe the public a correction.

J. F. Petrik

St. Louis, Mo.

CARBS VS. FUEL INJECTION

Gentlemen:

In the article on fuel injection and its future use on passenger cars, I agree with the technical experts who believe that a fuel injection system which will equal the all-around performance of conventional carburetor induction systems has yet to be designed.

Huntington presents a favorable picture by emphasizing the theoretical advantages of fuel injection, carelessly predicting its impending adoption by the auto industry, and leading one to think the carburetor is already obsolete. However, an item in *Fortune* magazine (Sept. '54, page 168) refers to a fuel injector carburetor intended to replace the standard carburetor on passenger cars and commercial vehicles.

A. W. Griffin, Jr.

North Hollywood, Calif.

ABOUT THAT RAILTON . . .

Gentlemen:

The car shown on page nine of the October issue is a Railton, built by the Fairmile Engineering Co., on a modified Hudson chassis, to the designs of Mr. R. A. Railton. Model shown seems a "drophead," or transformable, of 1936-37 vintage. The cars were light, power-to-weight ratio very

good, and the performance brilliant. Scotland Yard acquired a dozen or so for use as "Q" cars. Unfortunately, the brakes were not as good as the power unit, thus preventing the cars from being really successful in competitions.

A. C. Sampietro
Ann Arbor, Mich.

We're reprinting Mr. Sampietro's letter this month (though we told you in November that he got the correct answer) to give you the benefit of his interesting notes on the car. Congrats to Keith E. E. Pittman, Homer D. Brown, and Victor A. Vernon, who also proved top-notchers when it comes to identifying cars.—Editor.

PRESERVATION OF THE MODEL A

Gentlemen:

My interest was recently aroused by a letter to the editor from a reader of your excellent magazine, Mr. William E. Hall of Hartford, Conn., who has laid the groundwork for a club devoted to the preservation of the Ford Model A.

It is regrettable that in this area the majority of my fellow members in a national organization, supposedly founded for the preservation of the automobile, refuse to grant Model A its appropriate recognition. They offer as an excuse the fact that this type still abounds in large quantities and consequently feel that they would overshadow other cars at meets by sheer weight of numbers. The hot rod groups are equally unresponsive, recoiling in horror at the sight of a stock engine and unadulterated body.

I have no desire to quarrel with the antagonists of Model A because I derive great pleasure from attending Antique Meets with my other two "acceptable" cars, I do, however, feel that something should be done on a national basis for devotees of this ubiquitous automobile.

Wm. H. Tuner, Jr.
Charlotte, Mich.

We have a friend who is spending his time rebuilding a Model A to original factory-delivered condition (1930 style). Are there others interested in this bobby?—Editor.

"CAR MARKET" REBUTTAL

Gentlemen:

In reference to your articles, "Car Market" and a "Salesman Looks at the Car Market," I would like to remind the readers of **MOTOR TREND** that there are quite a few honest new and used car dealers in this country, and not all are shysters as your mag leads us to believe. I would quit the auto business if I had to sell like the salesman in your November issue, and furthermore, the author of the "Car Market" piece in the October issue, who didn't want the dealer to drive his trade-in (knowing it wasn't in good condition) is part of the reason why there are so many so-called dishonest dealers!

Joseph Amadio
Jeannette, Penn.

If you read the two pieces somewhat more carefully, you know that we carefully presented both sides of the story on car buying. Our readers, we believe, know that most dealers are honest.—Editor.

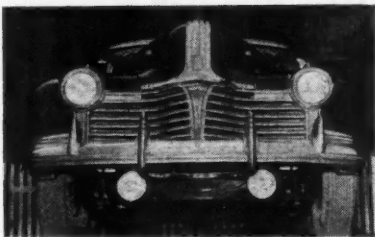
Glove Compartment

(Continued from page 6)

IMPROVING THE OUTSIDE appearance of a car seems to be the goal of not only the customizer but others as well. Two excellent examples are what is called the "No-Tenna" system and retractable foglights.

The "No-Tenna" system employs the theory that any conductor (a wire, piece of metal, or even a car body) develops signal voltage drop within the limits of the conductor or body extremes. Thus you have a signal which affords extremely low electrostatic noise pickup—no interference from street cars, ignition, generator, etc. The developers (Al Davis Radio Co., 5037 W. Pico Blvd., Los Angeles 19) seem to have overcome difficulties of others in perfecting a body conductor system.

The other appearance improvement is push-button-controlled, retractable foglights which swing down and back from under



the car body. Located just behind the front bumper, these lights are adjustable to any distance desired, and have special brackets to protect them against possible damage on rough roads. When not in use, they swing up and out of sight, thus relieving the car of its four-eyed monster appearance. Melvin Riggs, Box 576, Woodlyn, Penn., is responsible for this unique development.

THE PANDA will be another addition to the small car field in 1955. Built by Small Cars, Inc., 225 E. 8th St., Kansas City, Mo., this car will have a streamlined plastic body powered by a Crosley engine and running gear. The plastic finish will have the color in the material, assuring a very durable paint job. It is to be classified as a "utility" vehicle and not a sports car, and will cost approximately \$1000. Production is scheduled for early 1955, at which time the retail cost might change to \$1500. As we've reported, the Crosley still has a loyal core of supporters, and if the knot of service and parts supplies can be unravelled by a comparatively small outfit, the bug may become popular again.

A PEEK BEHIND the iron garage door of Soviet automobile production, taken by an INS correspondent, indicates that wrap-around windshields and streamlined curves will appear in the Kremlin next spring.

Just as Detroit engineers have been working on 1955 model cars, designers at Moscow's Stalin Auto Works have been developing new automobiles. Kremlin brass and other Soviet big shots have been riding since the end of the war in big, black ZIS-110 limousines, facsimiles of the staid 1941

Packard Super Eight. But a new ZIS official limousine may be ready for a May Day premiere next spring.

Deputy director Ivan Karzov brushed off all questions about current, past, or future passenger car production. He said the factory filled "all the orders the government places." But he declined to put a price tag on the ZIS-110, saying that since all production went directly to the government, the factory didn't set a selling price.

However, relatively few of the spectators who turn out for auto racing on Sunday afternoons outside Moscow own cars of their own. To make it easy for fans to get to the races, the starting line is conveniently set up near a railroad station.

Few auto racers own their own cars either. Motor racing, like those two other "rich men's" sports in the outside world (sailing and horse racing), is socialized.

The just-crowned 1954 auto racing champ, Y. Ryabinin, wore the colors of the Motlov Auto Works sport society of Gorky. He tooled his souped-up Pobeda sedan over a 500-kilometer (312-mile) straightaway course at an average speed of 147 kilometers an hour (92 mph). The four-cylinder four-passenger stock car normally develops a top speed of only 65 to 70 mph.

The Pobeda is produced for taxi cabs and sale to private individuals. It retails at 16,000 rubles, \$4000 at the official exchange rate.

—The Editors.

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The "Custom" is scientifically calibrated to show actual "miles per gallon" for any car while driving! Its other professional scales keep a constant check on engine condition, and warn when minor adjustments are necessary to prevent costly repair bills. Its precision 0-25 vacuum scale makes "do-it-yourself" tune-up a "breeze" (and Mile-O-Meter's sensational "Dashboard Manual" shows you how!) The Mile-O-Meter "Custom" will pay for itself over and over again... it's the most important investment that you can make to get all the performance and economy your car can offer!



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Sensational "rotating" dial makes a scientifically-accurate "miles per gallon" scale immediately available for your specific make before offered anywhere... a feature that assures top accuracy!

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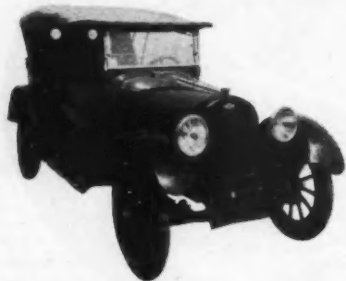
SEND NO MONEY • PAY POSTMAN NOTHING

Spotlight on Detroit

By Don MacDonald



Two-tone Bel Air convertible is a Chevrolet style leader. That's a 1917 V8 at left



DETROIT, MICH.—Last year, only three makers (Buick, Cadillac, and Oldsmobile) donned cloaks and daggers during the months immediately preceding public announcement of their products. The rest made no effort to shroud the contents of haulaway trucks, and in many instances, factory executives and dealers drove around Detroit quite openly, days early. No one noticed because there was nothing outwardly new about most of the "new" cars.

PREPARATIONS FOR 1955 have been conducted in an atmosphere that should attract novelists. Of the eight cars we will describe in this issue, no less than seven are virgin new. Automotive writers shuttled frantically from Flint to Dearborn to Hamtramck to report the births, but found that proud parents (like Ford) wouldn't divulge any vital statistics until they saw, for example, what Plymouth claimed. As Plymouth was waiting on Ford, the result was nearly ludicrous. This copy of MT narrowly escaped going to press with several blank pages that could only be filled after these battling parents had settled down on the dimensions and strength of their offsprings. As you might have

guessed, such specs were physical fact months ago; it was frantic, last-minute research into, shall we say, their modulus of elasticity that caused the delay.

EVEN THE PRINTING COMPANIES

in and around Detroit have had their problems. They must place glossy catalogs and other sales literature in the hands of dealers well in advance of announcement time, and have been stymied by a traditional little phrase at the bottom of the specification page that is normally taken for granted. "Subject to change without notice" has acquired real meaning for 1955. Even wastebaskets full of preprints are under police guard until burned, because there have been several instances of thievery. Bootleg copies of 1955 sales catalogs were being hawked like magazines in Detroit for 25 cents each until the law intervened, and there was an instance of this occurring as far away as Indiana. One manufacturer, when he heard that a competitor had some surreptitiously-taken but out-of-focus prints of his new models, offered to send along decent pictures because he felt that the others wouldn't do his car justice. He had a point; all the new cars are good enough to deserve standing alone in a well focused spotlight.

THE 1955 CHEVROLETS CERTAINLY QUALIFY.

In describing the new V8s (starting on page 22), we nicknamed this beautiful Flint-made dragster "Cadillette." You might prefer "Chev 99" or "Cheverarri." With the exception of the Corvette, it has been 35 years since Chevrolet last produced an automobile of interest to the *aficionado*. The old touring car pictured

here is a V8. It was produced from 1917 to 1919, but then gave way to a long, unbroken line of trolley-car substitutes that, as of today, account for every fourth vehicle on the road.

CHIEF ENGINEER ED COLE and

Chevrolet stylists have come up with a package that has in large measure that aggressive, lively look of a thoroughbred. The simple, lattice-work grille blends well with the bumper and headlight treatment. Bodywork on all models except the station wagons features the notched rear door (or quarter panel) introduced last year by Cadillac, Buick, and Olds. Another legacy is restrained use of chrome to set off the 21 two-tone color options. Treatment of the wrap-around windshield is forthrightly vertical, allowing neat and uncomplicated design of doors and windows. Even though the cars are from 2½ to six inches lower than corresponding 1954 models, passenger room has been increased.

FOURTEEN BODY MODELS ARE

OFFERED in the three series (One-Fifty, Two-Ten, and Bel Air), including a two-door station wagon, which is new to the Chevrolet lineup. Sales Manager Bill Fish is really going to plug his wagons this year in an attempt to chip a chunk out of Ford's 47-per-cent hold on this market. Come spring, the sales drive will be sparked by still another wagon which will remind you strongly of the Nomad sports car. Convertible and hardtop are available only in Bel Air dress to take full advantage of two-tone color possibilities. Interiors are well matched with outside color; we particularly liked a black-and-white check-

FULL DETAILS: '55 CHEVROLET...

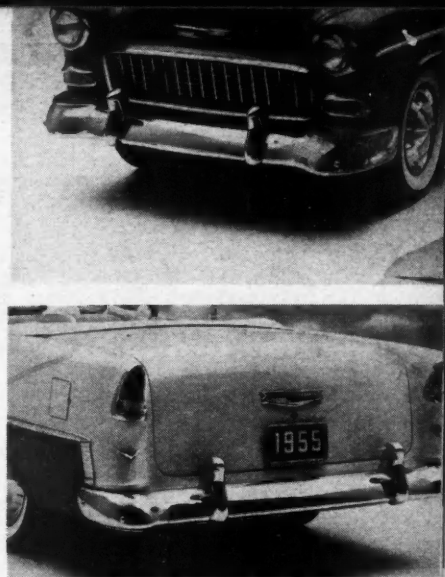
erboard effect (synthetic leather that looked real real) used in an off-white Two-Ten two-door. The new instrument panel is almost austere, especially when no radio is installed. Speed, heat, and fuel indicators are grouped into one fairly readable, semi-circular unit along with oil and generator warning lights and Powerflite quadrant. A metal strip imprinted with thousands of little Chevy trademarks stretches across the width of Bel Air panels, adding nothing to their appearance.

TRANSMISSION OPTIONS INCLUDE a beefed-up and even smoother Powerglide, a three-speed unit with a soft, cowl-suspended clutch pedal, and at long last, a Borg-Warner overdrive. As usual, these are tied in with engine variations. A hard-tappet, 123-horsepower six comes with the manual boxes, Powerglide sixes have a 136-horsepower, hydraulic-tappet engine, and although the two V8s each develop 162 horsepower, they have either hydraulic or hard tappets according to transmission. A 180-horsepower power package (see page 22) is available on either V8, and should be a Cadillac-beater when teamed with the 4.11 to 1 overdrive axle. The only reason, other than cost, that we can think of for this curious teaming of tappets to gearboxes is that even well-adjusted hard-tappet valves could be heard with the relatively quiet automatic transmission. Still, what about people who favor liquid tappets and hard gearboxes?

THE COMPLETE REDESIGN FOR '55 involves chassis and suspension as well as body and engine. Of the 4500 different parts (15,000 counting duplications) that make up a Chevy, 3825 are brand new. The new frame is claimed to be 50 per cent stiffer, even though it is 18 per cent lighter. There are no cross-members except at the ex-

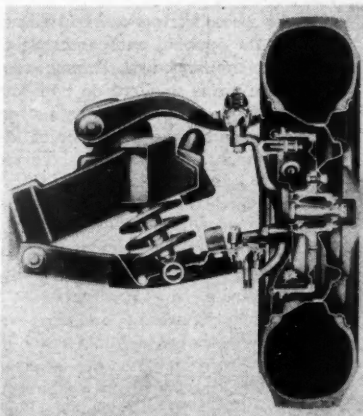
treme front and rear; backbone is imparted mainly by the cowl and other body structure. It represents a sort of compromise between unit construction and the conventional, self-sufficient chassis. The front suspension, with its "spherical" joints, is somewhat similar to the current Fords. However, it has an almost uncanny ability to minimize dip during severe braking. Rear springs are exceptionally long and are rigged on the outside of the frame. These are in large measure responsible for Chevy's new-found "sports car-acteristics" which Walt Woron describes on page 50. Another traditional feature relegated to history this year is the torque-tube drive. This was abandoned in favor of hotchkiss so as to achieve the required low silhouette. No special provisions to guard against "spring wrap" occurring on fast take-offs are offered except shot peening of the top of the main spring leaf. The power-package job with overdrive would be a good candidate for Traction-Masters.

ENOUGH ACCESSORY OPTIONS ARE LISTED to put a loaded Chevy into the price bracket of a chinchilla coat. There is a tiny but effective combination heater-air-conditioner available on V8s only, all located under the hood and in the new cowl, à la Nash and Pontiac. You can have power assistance on practically everything except the ashtray. The new radio has Delco's unique bird-dog tuning mechanism as well as what are claimed to be high-fidelity characteristics. The tweeter and the woofer are located on the right side of the instrument panel. That redundant little night owl, Guide's Autronic Eye, can be had again, although dropped by at least one other GM car. With or without these embellishments, Chevrolet is an outstanding new car and one which will be a very popular used car. What more can you say?

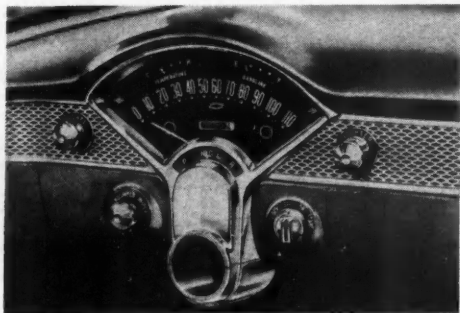


Front-end view of new Chevrolet (top) shows broad, low grille, hoodline as styling keynote. Hooded lights add length

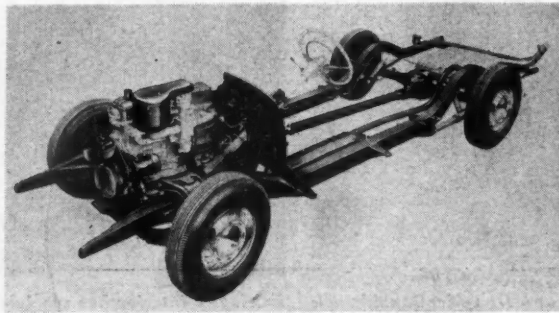
New tail lights, a redesigned deck, and contoured rear bumper are a few of the changes that make '55 model really new



Spherical joint front end aids stability, teams with new control-arm geometry, tubeless tires for safety, comfortable ride



Lights replace ammeter and oil pressure gauges in '55 Chevrolet. Note the Powerglide quadrant



Hotchkiss drive and outrigger-mounted rear springs (introduced on Corvette) are major Chevrolet suspension changes

CONTINUED



A custom car? No, "just" the most elegant '55 Ford—the Fairlane Crown Victoria, available as shown here or with the optional plastic roof panel introduced in '54

FORD'S BID FOR SALES SUPREMACY

is sparked by six models in the luxurious new Fairlane series, named after the late Henry Ford's Dearborn mansion. The Crown Victoria on our cover is cheesecake personified, with or without the optional transparent plastic top. The nonstructural chrome tiara across the top is standard on both versions. Mainline and Customline are continued and there is a total of five station wagons, ranging from the eight-passenger Country Squire (with "wood" side trim made out of Fiberglas) to that favorite of suburban cowboys, the Ranch Wagon. For your personal use, the Thunderbird is officially on the market at the startling low price of \$2695, which includes hardtop and four-way power seat but not the folding top (an optional \$70 extra) nor the attractive chrome molding shown in some recent advertisements. At presstime, the soft top was the only one available, but this situation will probably change quickly.

HORSEPOWER FOR ALL FORDS

is still a deep secret. MT estimates it (and gives more details) on page 24, but more important is the claim that torque has been increased 30 foot-pounds in the V8s. A heftier six is optional in all models including the Fairlane convertible. The most powerful V8 is tied to Fordomatic, which features a new low-gear kickdown start in DRIVE range. Standard and overdrive transmissions have also been re-engineered to absorb the higher power outputs. Chassis have been redone to get lower silhouettes without sacrifice of ground clearance. Both front and rear suspension have been changed in detail. A three-degree tilt-back in front minimizes what tendency there was to harshness, and rear springs are rigged on the outside of the frame rail for greater stability. There is a rubber snubber on each side to prevent excessive "spring wrap" (characteristic of the hotchkiss-type drive) during full throttle starts. The already

good Ford brakes have been further enlarged; greatest improvement is on the heavier station wagons which have 25 per cent more braking surface.

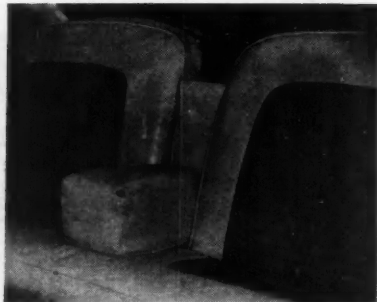
AS PREDICTED BY MT last April, there is a strong Thunderbird flavor to '55 Ford styling. Body shells are completely new and all models feature a wrap-around windshield with 1100 square inches of glass area. The Fairlane is an inch lower than standard Fords and a good 2.4 inches lower than any previous Ford, a reduction achieved without sacrifice of any interior dimension. You can have your new Ford painted in any of 13 single or 36 two-tone color options. Interiors are as dramatic as the combined talents of 35 different textile mills can make them. Our vote for the most attractive instrument panel in the low price field this year goes to Ford, with an additional bow for their attractive and functional acoustical headliner material.

THOSE WHO WANT AIR CONDITIONING

won't have long to wait. Ford promises to have an under-hood system (combined with heater) ready for the first warm day in spring. We understand the unit will be dealer installed, and surprisingly enough, adaptable for use on convertibles and station wagons. Although prices probably won't be reduced in 1955, Ford buyers who live more than 100 miles from Dearborn should benefit from a recently announced equalization of the so-called "phantom" freight charge. This can amount to a reduction up to \$104 in cost to, say, a California dealer who gets his Fords from the Long Beach assembly plant but still pays a surcharge roughly equal to the cost of transportation from Dearborn. Watch for the rest of the industry to follow suit.



Walt Woron and Don MacDonald look over the new and the old. Comparison of Ford taillights illustrates radical changes



Fairlane's interior has special-built look with its vinyl plastic upholstery, acoustical headlining and rear seat armrest



That long, low, wide look is here to stay, and Ford strengthens the new look with its Thunderbird-like grille, broad hood

Motor Trend

'55 PLYMOUTH...

ONCE UPON A TIME, not too long ago, there was a pudgy little duckling called Plymouth. Its manners and mien were so backward that it lost many of its friends. Along came Virgil Exner, and with a wave of his stylist's wand, the little duckling became a beautiful swan. Of course, it wasn't this simple, but the transformation was equally dramatic. In our opinion the new Plymouth will nab its share of concours ribbons in 1955 (maybe enough to boost it back into third sales place), and there is V8 power to go with its new-found looks.

THE SINGLE BAR GRILLE, with its ribbed mid-section somewhat reminiscent of Mercury, makes the front end look lower and wider. Use of chrome elsewhere is a neat compromise between esthetics and the demands of the used car business. A particularly nice touch is Plymouth's version of the flared rear deck, a styling device used by many this year to avoid gaposis of the trunk. Instrument panels are neat and practical, except that some people may object to the remote location of the oil and heat gauges. PowerFlite equipped models feature a panel-mounted shift lever; overdrive and three-speed cars have conventional controls on the steering post. Hy-Drive, which was an interim expedient, has been quietly dropped.

EVERY DIMENSION BUT HEIGHT has been increased. Although there is only one more inch wheelbase, overall length is 10 inches greater. The reduction in height (mostly at the expense of front seat headroom) will inconvenience few people. Styles include all those available last year, plus the addition of a four-door suburban. There is complete engine and transmission interchangeability except for the convertible (Belvedere V8 only) and the three-passenger Plaza coupe, which is primarily a fleet car and therefore powered exclusively by the beefed-up, 117-horsepower six. The new V8, described on page 22, is available in three versions, the most interesting being a 177-horse job with four-barrel carburetor and dual exhausts.

THE TOTALLY NEW BODY AND CHASSIS are studded with innovations. The windshield is truly wrap-around, but the backward-slanting "A" posts alleviate that fishbowl look common to today's glass houses on wheels. Much attention has been paid to insulation and sealing. The trunk lid is hinged

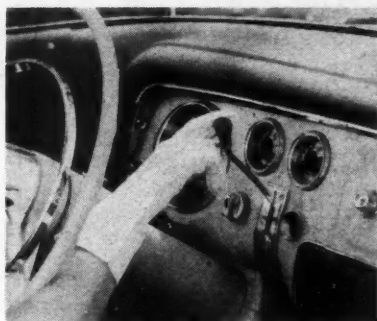


Rakish frontal silhouette eliminates any foreshortened appearance, illustrates the Chrysler "Forward Look" to good advantage. Windshield puts mass on lower body

by torsion bar, and will stay put in all positions. Now that the filler cap is back up on the right rear fender hidden under a little door, there'll be no more "squat 'n' squint" for the nation's gas station attendants. In common with other Chrysler products, Plymouth's redesigned steering linkage has symmetrical idler arms and tie rods. This insures a constant ratio from lock to lock even on cars equipped with the coaxial power assist option. Front tread has been increased to 58.44 inches and the Oriflow shocks have been moved inside the spring coils.

AIR CONDITIONING HEADS THE

LIST of factory-installed accessories. Similar in design to units offered on larger Chrysler Corp. cars in the past, it features a clutch mechanism which keeps the compressor inoperative except when needed. The list of power boosts is complete, and as on all cars for 1955, tubeless tires are standard. The new heating system is distinguished by a defroster unit that operates over the whole width of the windshield. Standard on all models is a hood ornament that looks about as much like Plymouth's traditional sailing ship as it is possible *not to*, an inadvertent (?) symbol of the break with the past. Another break will be in Plymouth prices, which should be from \$35 to \$100 lower than in 1954.



PowerFlite-equipped Plymouths have transmission control lever mounted on instrument panel. See page 50 for details



Horizontal theme again gives illusion of lower body style ('55 is only 1.7 inches lower than '54) to Plymouth's rear end



Use of strong horizontal lines "lowers" '55 Plymouth. Although its wheelbase is only an inch greater than the '54's, the new Plymouth is 10 inches longer overall

Spotlight on Detroit

FULL DETAILS: '55 PONTIAC,



Identified as a Custom model by chrome trim on rear fender, this is Pontiac's biggest—the Star Chief four-door sedan

(fourth to third) under 28 mph, automatic upshift above 80 mph if you forget and leave the lever in D-3, automatic upshift (from second to fourth) above 45 if you forget and leave the lever in LOW.

PONTIAC HAS TWO BODY SERIES, the 124-inch-wheelbase, 210.3-inch-long Star Chief (3½ inches shorter this year), and the 122-inch-wheelbase, 203.2-inch-long Chieftain. Counting the Star Chief Custom as another body series (actually, it's a more chromed version of the Star Chief), there are 12 body styles: two- and four-door sedans, Catalina (hardtop), two-door station wagon, two-seat and three-seat four-door station wagons in Chieftain series; a four-door sedan, convertible, and Catalina in Star Chief series (the same in Custom series).

FRONT SEATS are now three inches wider (although overall width is less by narrowing down the doors), and there's more headroom in the rear seat. Rotary door locks replace latch-type, and the rear door handles cannot be opened with the latch down. The instrument panel is lit by a diffused green glow. The center glove compartment door has impressions for holding glasses or Coke bottles while you're in a drive-in.

OPTIONAL ACCESSORIES INCLUDE improved power brakes (with a vacuum reserve that "protects" the system against engine stall), unchanged power steering, new underseat heater (incorporated in the cowl vent system), and air conditioning (contained in the engine compartment, and supplied either with recirculated or fresh air).

IN KEEPING WITH THE TREND (if we may use the word) of lower, more powerful, and better-handling cars for '55, the new Pontiacs are just that. They're 2¾ inches lower, have jumped 53 horsepower, and by a relocation of the wider-base rear springs outboard of the rugged I-beam, X-member frame, they stay flatter in corners (see "Driving Around," page 52). Vertical kingpins (formerly tilted five degrees inward) make for easier handling, reduce tire scrub, and lessen steering wheel shock.

WITH 109 ADVERTISED CHANGES the '55 Pontiacs are virtually new from the ground up. The frame has been beefed up; front brake drum size has been increased from 11 inches to 12, giving nine per cent greater lining area; tubeless tires are standard equipment; the new lower bodies incorporate the GM wrap-around windshield, a three-part, articulating bumper, and a vent intake that has been moved up to below the windshield.

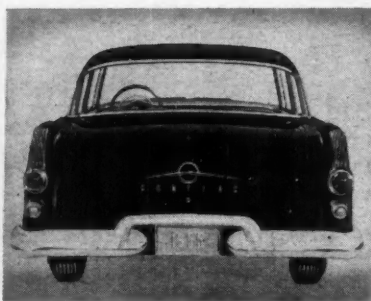
THE 180 HP OVERHEAD VALVE V8 is probably the most important change (see "New Engines for '55," page 24).

Both the six and straight eight have been shelved, with the V8 being used in both series of Pontiac bodies—the Star Chief and Chieftain. Following GM practice, the Pontiac gets its spark from a 12-volt battery system. As yet, Pontiac has not announced a power package for those who want to stay ahead of the new Chevys, but MT predicts that they'll soon follow cousin Chevrolet with a package consisting of a four-barrel carburetor and dual exhausts (upping their power by about 20 horses).

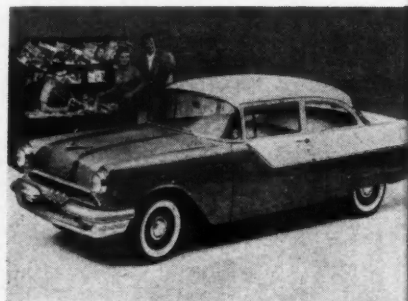
STICK SHIFT TRANSMISSION REMAINS STANDARD, and is coupled with a 3.64 rear axle ratio, 3.9 optional. The clutch now has a stronger spring, and a new clutch control, reducing foot pedal effort. With the extra-cost, smoother shifting (for '55) Dual-Range Hydra-Matic, the Chieftain uses the "economy" axle of 3.08 ratio, while the Star Chief uses the 3.23 ratio. Front planetary gear ratio has been upped from 1.45 to 1.55, increasing third gear passing ability. Other H-M improvements point toward a more automatic transmission: a part-throttle downshift



Pontiac Catalina has lush interior upholstery in two-tone leather. Chrome-plastic material is used as edging below windows



Pontiac continues to use "Silver Streak" motif as mark of distinction; fender-top grooves match hood's ribbed metal strips



Lack of three-star trim and overhang are identifying features of Chieftain series. This model utilizes Chevrolet body shell

Motor Trend

'55 DODGE . . .

CHRYSLER CORPORATION'S PLAY-

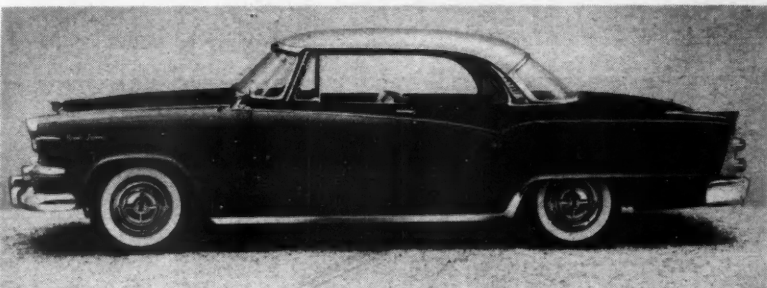
BOY this year is Dodge, at least for the most of us who must budget our fun. The Royal Lancer with its tri-tone color scheme and optional 193-horsepower, superduper Red Ram V8 is the best thing to come out of Hamtramck (Mich.) since Danny Thomas slicked back his hair and moved in on TV. It has a completely novel double-decker hood and enough chrome to decorate a harem, but the overall effect is strangely pleasing. We shouldn't be surprised because it represents the first combined efforts of two men who between them have about the highest octane rating in the industry—Dodge President Bill Newberg and Chrysler stylist Virgil Exner. Of course, Chief Engineer Jim Zeder had more than a little to do with it too, which makes the package dependable as well as exciting.

THE ONLY LINK TO THE PAST

is the 123-horsepower "Getaway" L-head Six, available to those who want it in the low end of the very complete Dodge line-up. Other Coronets have V8s, as do Royals and Custom Royals. You can sort out engine options by referring to our chart on page 28. The "Lancer" designation is reserved for hardtops and convertibles. Aside from the usual sedans, Dodge is offering both two- and four-door station wagons that are utilitarian or luxurious, depending upon your pocketbook. Some deluxe cars use a peculiar but sturdy synthetic called "dacron chrome." Dodge upholstery has a much-needed richness—an impression that is hard to define, and must be seen to be realized.

WHEELBASE HAS BEEN IN-

CREASED to 120 inches, making some 1955 Dodges 16 inches longer (overall) than their 1954 counterparts. In fact, every dimension but headroom has been raised, which is all right because people old enough to buy cars tend to grow wider rather than taller. Luggage space has been upped by a whole two cubic feet, enough extra room to stow things you don't really need but might want on a trip. It's a very usable car, but Dodge hasn't forgotten the fact that the driver is alone most of the time. The front seat (with optional power assist) has a full five inches to travel back and forth; a little over three inches up and down. You face one of the year's better instrument panels. Individual gauges are asymmetrically grouped around the speedometer and glare is reduced by an overhanging ledge that should really be crash-padded for looks as well as safety.



A riot of color and line-carrying chrome, Dodge Royal Lancer (top) shows off tri-color treatment in a new hardtop model

Labeled a Custom Royal Special Club Coupe, Lancer (above) utilizes stainless-steel trim, also extra-cost wheel discs

Although three-speed and overdrive-equipped cars have the control lever in its usual position on the steering column, PowerFlite operates from the panel.

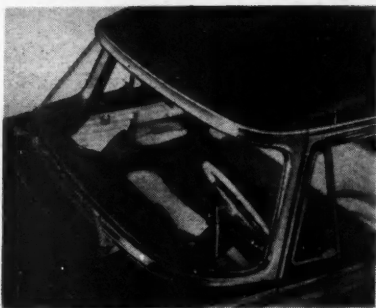
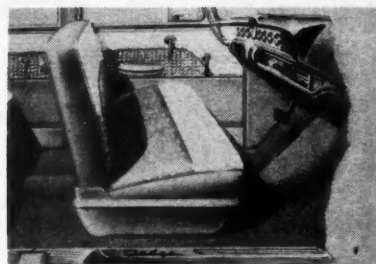
ACCESSORIES OF ALL KINDS

are available at extra cost. Real cool air conditioning (a must for young couples who sit for long in the Royal Lancer) we take for granted nowadays along with the other power assists. Optional wipers of infinitely variable speed that park themselves out of sight are a new item available on all Chrysler products as is a search-tuning radio with front and rear speakers. Bill Newberg's new cars are pretty dazzling; you'll see plenty of them on the highways in 1955.

Custom Royal's interior, top right, is of silver-threaded Jacquard material. Door panels glisten in a rich "dacron chrome"

Slotted tail light housing of Dodge Custom Royal, center, allows it to be seen from side. Bottom lens is backup light

Right, "Pilot View" windshield provides 16 per cent greater visibility. Stainless-steel molding standard on Custom Royal



Spotlight on Detroit

FULL DETAILS: '55 DESOTO...



DeSoto retains familiar appearance, has no unsightly styling gimmicks for '55



Fireflite Sportsman hardtop has sidespear painted to match the color of top



Good-looking instrument panel is DeSoto feature. Brake pedal is eight inches wide, virtually calls for left-foot application



Torsion bar system balances trunk lid at any angle. Hinges are well out of the way, will greatly reduce luggage damage

THERE WAS A TIME when DeSoto could be called the experimental car of the Chrysler Corp. Do you remember the 1942 model with its fold-away headlights? After the war, this division became the most conservative member of a family that tended to be pretty pro-status quo anyway.

NOW DESOTO IS OUT FOR BEAR

with their striking new 200-horsepower Fireflite series. Like all the new Exner-designed cars, it is clean, slim, and looks like a real automobile. Ornamentation is used not to create new highlights but to accentuate existing ones. When you get in, you face the best-looking instrument panel we have seen on any new car to date. Fabrics are "dope-dyed" for color stability.

FIREFLITE AND FIRE DOME MODELS (185 horsepower) share the same

126-inch wheelbase chassis which has full length, box section side rails, a stronger front crossmember, and rear springs made parallel (and over five inches farther apart) by outriggering the front shackle. Convertible-coupe cowl shake, chronic on all earlier Chrysler-built cars, has been tackled this year by using a special frame incorporating I-beams for the X-members, rather than the previously used U channels. Roll center (the point about which the car naturally tends to tilt) is one of the highest in the industry.

COWL-SUSPENDED BRAKE (AND CLUTCH) PEDALS, long overdue on

all Chrysler products, are offered for the first time. The power brake option has a six-inch pedal travel with new valving that eases surge when the power cuts in. PowerFlite-equipped DeSotos have what is easily the industry's broadest brake pedal, and the excellent internal-expanding handbrake is continued on all models. Chrysler Corp. considers this good enough to eliminate the need for a parking pawl in PowerFlite, greatly simplifying that transmission.

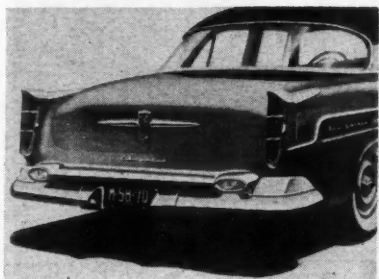
'55 IMPERIAL

Completely deluxe Imperial characterizes Virgil Exner's styling philosophy, evidence of Chrysler's "Idea Car" program



Motor Trend

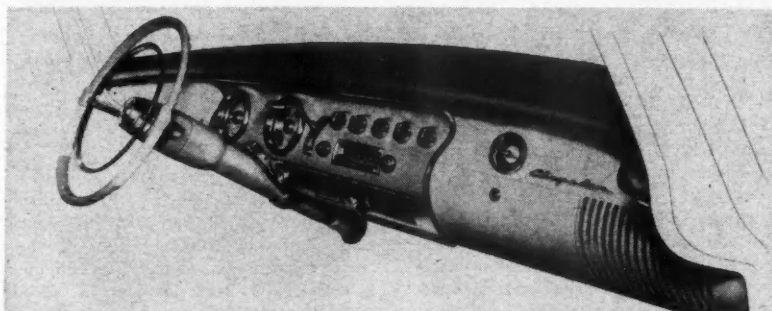
'55 CHRYSLER...



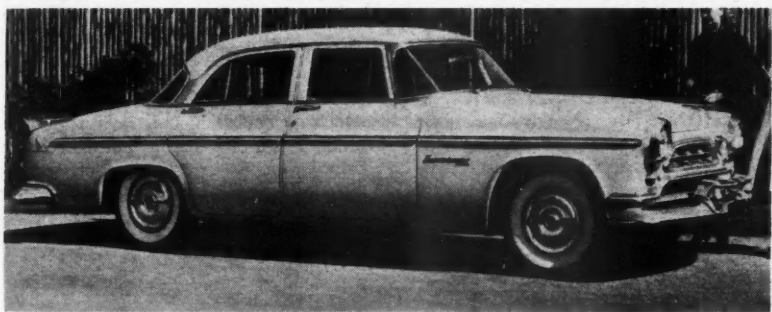
Front "floating bar" bumper guard is repeated above Chrysler's rear bumper; backup lights are recessed in oval bezels



Increasingly wider strip on body side is "character line" of New Yorker series



PowerFlite control is in front of driver, furthers idea of fully automatic drive



Windsor has smaller "character line" (see photo at top right), smaller V8 engine

PACING THE 1955 CHRYSLER

LINEUP is the 250 FirePower New Yorker Deluxe, available as a sedan, Newport or St. Regis hardtop, convertible, and station wagon. These cars share common body shells with the new V8 Windsor, but there is a considerable gap in luxury and therefore price. There is no equivalent to last year's standard New Yorker.

POWERFLITE IS STANDARD

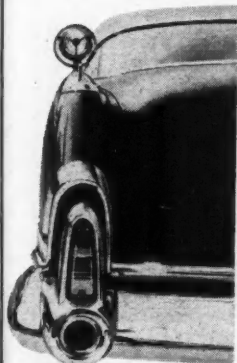
on the more expensive car, but you still pay extra for it in the Windsor which normally comes equipped with a three-speed box. Overdrive is not available, although all the other divisions have it. Body and chassis features are similar to those already described for other Chrysler-made cars, but as might be expected, little but important extras are standard on the top line. For example, all Chryslers are undercoated at the factory. Outside door handles are taken directly from the K-310 series of show cars. Both New Yorker Deluxe and Windsor are interesting and desirable automobiles, but there is another real big gun aimed in Cadillac's direction (see below).

THE NEW IMPERIAL IS PRESENTED as a separate and distinct brand name. It has its own assembly line and uses little, if any, body tooling in common with lesser Chryslers, though it has the FirePower engine. Virgil Exner's "idea" car is finally in production. With the exception of the grille, it is patterned closely after the original K-310 coupe. Probably not too many will be built because it is a car for the connoisseur, something which hasn't

been available to Americans since the last Lincoln Continental in 1948.

LUXURY EQUIPMENT IS STANDARD

on both Custom (130-inch wheelbase) and Crown Imperial (149.5-inch wheelbase) models. This includes power seats and windows, PowerFlite, coaxial power steering, and power-boosted disc brakes. Body models include six- and eight-passenger sedans, a limousine, and the Newport hardtop.



You'll never mistake an Imperial for any other! Fender-tip exhaust pipe, pedestal-mounted tail light are styling standouts

THIS CURVED-DASH MODEL

WAS GOOD ENOUGH IN

(1903)



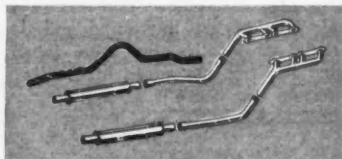
BUT IT WON'T MATCH
TODAY'S NEW MODELS
FOR RELIABILITY
AND SERVICE

By the same token,

Dual Exhaust Systems of a few years ago were fine for the cars we had then—but—today's high-compression, big-displacement V8's require the finest exhaust system design possible. It takes the best in engineering "Know-How," tops in production equipment, highest quality material to produce to today's Exhaust System requirements.



—the first to market super-efficient exhaust systems incorporating Belond EQUA-FLOW Exhaust Headers—continues to be the leader in Engineering, Design and Production of all types of extra-performance exhaust system products.



NEVER TAKE LESS THAN THE BEST!

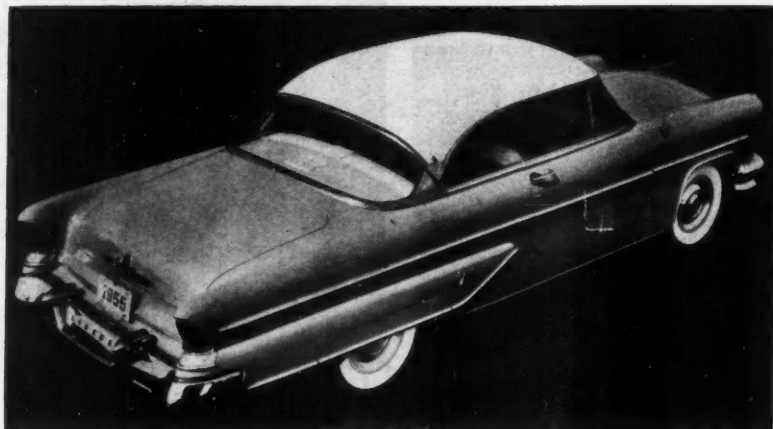
INSIST THAT YOUR V8 BE EQUIPPED WITH BELOND EXHAUST SYSTEM PRODUCTS . . . BETTER THAN "GOOD ENOUGH!"

Southern California
MUFFLER CORPORATION
CULVER CITY 2, CALIF.

*Trade Marks Registered, U. S. Pat. Off.

Spotlight on Detroit

'55 LINCOLN



Eight inches longer overall, the '55 Lincolns have sharply angled tail lights, new length-adding chrome trim, and a grille treatment that stresses a low look

MANY PEOPLE WILL ASK why Lincoln is not an entirely new car for 1955 since both the Ford and the forthcoming Mercury are. The answer is a simple one: there just wasn't enough tooling capacity available to the Ford combine to change all three cars in the same year, so Lincoln had to content itself with a "major facelift." Stylists, operating within this restriction, did right well for themselves, and if L-M salesmen across the country can explain away the lack of a wrap-around windshield, the car should click.

THE NEW TURBODRIVE TRANSMISSION is the biggest engineering change. This is a big brother of earlier Ford designs, which consist essentially of a torque converter coupled to a three-speed planetary gear set. Borg-Warner was the originator, but now

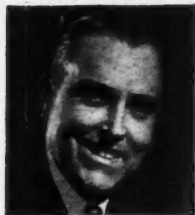
all Ford, Lincoln, and Mercury automatics are built by Henry in a brand new plant in Livonia, Mich. Lincoln's version has the new throttle kickdown which makes it unnecessary to move the control handle into LOW range for faster getaway. Another bonus of the new transmission and greater engine power (225 horsepower, 332 foot-pounds torque) is a reduction of rear axle ratio from 3.31 to a real economical 3.07.

INTERIORS ARE "CHINESE MODERN" in concept, which we guess is one way of explaining real bright colors which do not clash. It is impossible to order a Lincoln that is not correctly color-keyed. Chassis changes are confined to a wider rear tread and different shock absorber mounting. Tubeless tires and dual exhausts are standard.



A new look is only half the Lincoln story for '55. The new models have a "Turbo-drive" automatic transmission linked to dual-exhaust-equipped, 225-horsepower V8

Motor Trend



THE *FORWARD* LOOK...

"These 9 top aircraft designers salute Chrysler Corporation's all-new 1955 styling."

L. L. Colbert. President



Left to Right: Alexander Kartveli, Republic Aviation Corp. • Michael Gluharoff, Sikorsky Aircraft Division, United Aircraft Corp. • Hall Hibbard, Lockheed Aircraft Corp. • Glenn L. Martin, Founder, Glenn L. Martin Co. • Louis Breguet, Société Ateliers d'Aviation • John K. Northrop, Founder, Northrop Aircraft Corp. • William T. Piper, Piper Aircraft Corp. • Robert J. Woods, Bell Aircraft Corp. • George Trimble, Jr., Glenn L. Martin Co.

THESE famous aircraft designers attended a preview of Chrysler Corporation's all-new concept of automotive style for 1955: **THE FORWARD LOOK.**

They saw new-styled engineering... *entirely new design* from frame to roof... created to match the mood of today's car owners.

They saw new length, new lowness. They sensed *motion* even when the cars were standing still.

They found new features the public has been seeking... features right up an air-minded man's alley.

They were right at home with the New-Horizon windshields—fully swept back and fully wrapped around—windshields that provide visibility equalled only by an airplane pilot's.

They noted the convenience of the PowerFlite Range Selector in a logical new place—a place an aircraft designer might have chosen.

THE FORWARD LOOK intrigued these men as it is bound to intrigue you, too. It brings together the things you have been asking for—in looks, in luxury, in comfort, in performance. It will bring you fresh pride of ownership every time you step into your 1955 Chrysler Corporation car.

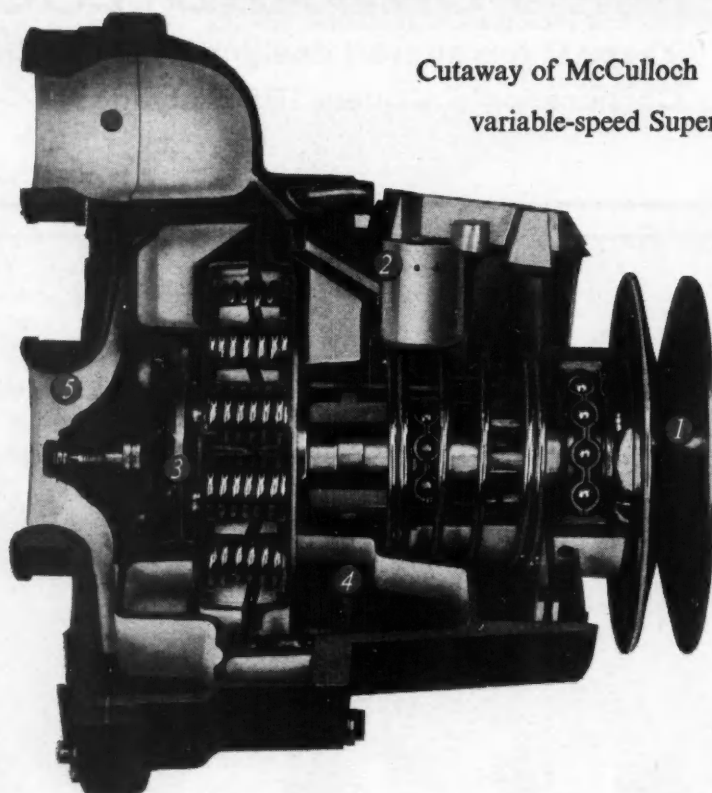
Be sure to see **THE FORWARD LOOK** in the new Plymouth, Dodge, De Soto, Chrysler and Imperial cars for 1955.

On display November 17! The 1955 PLYMOUTH • DODGE • DE SOTO • CHRYSLER • IMPERIAL

CHRYSLER CORPORATION > **THE *FORWARD* LOOK**

Copyright 1954 Chrysler Corporation

See Chrysler Corporation's great new full-hour TV Shows—"Shower of Stars" every 4th Thursday... "Climax!" the 3 intervening Thursdays. CBS-TV, 8:30-9:30 P.M., EST.



Cutaway of McCulloch
variable-speed Supercharger

New McCulloch supercharger adds 40% more horsepower in one easy step!

Here at last is the easy, inexpensive way to increase horsepower. If we don't answer your question below, let us know.

Q. What does this supercharger do?

A. It delivers air to the carburetor under pressure, packing more fuel-air charge into the cylinders, which increases horsepower tremendously.

Q. What's the horsepower increase?

A. On the average, 40% increase at the rear wheels, where it counts. (Typical case—'54 Ford, 42% increase.)

Q. What will it do for car performance?

A. The McCulloch supercharger's greatest benefit is increase in acceleration and reserve power, although it will also increase top speed considerably.

Q. What's different about the McCulloch supercharger's operation?

A. It's the only supercharger with automatic, variable-speed drive. This gives extra boost on demand at any speed.

Q. Does installing the McCulloch supercharger involve engine modifications?

A. No. The engine remains stock. It's important to note that this supercharger can be transferred easily to your next car!

Q. Can it be used on a modified engine?

A. Yes, many special installations have been made.

Q. Will it harm the engine or affect normal operation?

A. No. Actual tests show normal life. If anything, it adds smoothness.

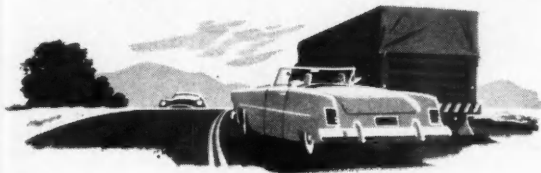
Q. Are many of these new superchargers on the road?

A. Yes, thousands. They've been road-tested for 3 years in California, and are now being offered to car owners everywhere.

Here are features found in no other supercharger, whether aircraft, automotive, or marine. They add up to positive performance and quiet, long life:

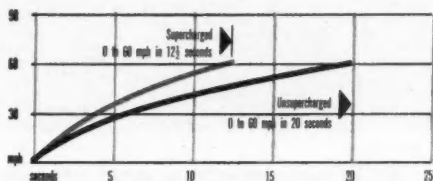
1 Variable-speed drive changes boost automatically to high or low pressure on demand. 2 Automatic control system operates variable-speed drive and regulates maximum supercharger pressure. 3 Ball-bearing 4.4 to 1 speed increaser eliminates gears, and is smooth and noiseless at all speeds. 4 Built-in oil pump and reservoir provide independent, clean lubrication. 5 Light-weight magnesium impeller gives instant speed response.

add safety...add thrilling performance... at all speeds...at the touch of the throttle!



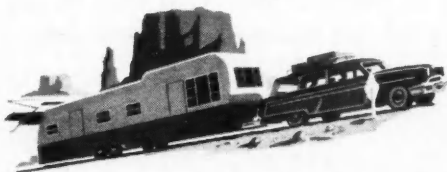
Safer Passing

On today's crowded highways, *power* adds *safety*. Your McCulloch supercharged car has terrific acceleration and reserve power to take you around traffic obstacles quickly.



Thrilling Acceleration

All through the speed range, a McCulloch supercharger gives thrilling acceleration. The variable-speed drive automatically adjusts to provide proper pressure.



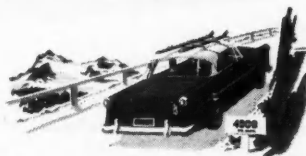
More Hauling Power

McCulloch supercharging can give your car or truck additional power to haul heavy loads, and still keep plenty of reserve power for safe highway driving.

50 MPH	ROAD LOAD	Reserve hp (stock)
50 MPH	ROAD LOAD	Reserve hp (supercharged) (70% more)
60 MPH	ROAD LOAD	Reserve hp (stock)
60 MPH	ROAD LOAD	Reserve hp (supercharged) (125% more)
80 MPH	ROAD LOAD	Reserve hp (stock)
80 MPH	ROAD LOAD	Reserve hp (supercharged) (200% more)

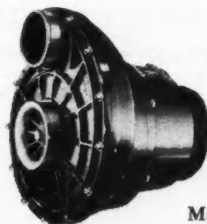
Tremendous Reserve Power

Notice how McCulloch supercharging gives a car far greater reserve power. "Road Load" is the horsepower required to keep a car moving at a constant speed.



No Power Loss at Altitude

The ordinary car loses power as it gains in altitude, because the air gets thinner. Your supercharged car keeps its power; supercharging forces more air into the engine to compensate for altitude losses.



Now available to car owners everywhere

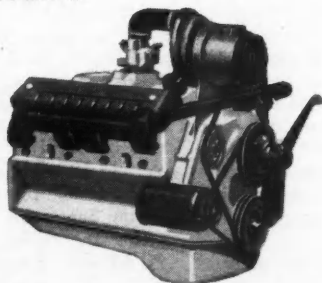
Many automotive dealers are now installing McCulloch superchargers. If your dealer doesn't have them, have him write for complete information.

Kits available for many cars

The McCulloch supercharger can be adapted to any car. Complete adapter kits, with brackets, pulley and all other parts needed are now available for many cars.

V8 Ford, 1950 and later (\$245, complete kit including supercharger); Mercury, 1950 and later (\$255); Lincoln, 1952 and later (\$285). Complete kits also available for: all V8 Buicks; all V8 Oldsmobiles; Cadillac, 1949 and later; Studebaker V8; MG, TD model; 1953 Ford V8 pickup; and 1954 Ford V8 trucks.

Typical installation
position
of supercharger
on V8 engine



McCULLOCH

Distributed by Paxton Products Division
Inglewood, California

Paxton Products Division

827 W. Olive, Inglewood, California

Send free literature on the McCulloch supercharger.

Make of car _____; year _____

type of engine ☐ V8; ☐ straight 8; ☐ six.

Check here for order if local dealer cannot supply you:

☐ Ship installation kit with supercharger for my car. Enclosed is \$50 deposit. I will pay balance on delivery:

Name _____

Address _____

City _____ Zone _____ State _____



Photos by Bob D'Olive

'55 Studebaker President State Sedan

MT's full-scale test program gets off to a good start with the lively performance and exceptional roadability of the Studebaker President

By Jim Potter

WE'VE JUST COMPLETED our first full-scale road test for the 1955 model year, and the car, a Studebaker President State four-door sedan equipped with automatic transmission, power steering, and power brakes, gave the testing crew many pleasant surprises.

"If the Studebaker President is a good sample of what's in store for us when we begin testing other 1955 cars," commented Fred Bodley, our Technical Editor, "we've got some mighty pleasant duties ahead of us this time."

He was referring, of course, to the increased power under the hood of our road test car and its highly competent roadability. Current and former owners of Studebakers who complain about low power may look forward to turning in their car on a '55 President, for its 175-horsepower engine (that's 55 more than the '54 Commander) lets it accelerate as well as, and in some cases, better than its nearest competitors among '54 cars.

Last month we gave you a preliminary rundown on this car in both "Spotlight" and "Driving Around." You'll be interested to know that our official test results were even more favorable than the informal checks of the car at South Bend made by Detroit Editor Don MacDonald; and, if you're really interested in improved

performance, a comparison of the President's test figures with those of last year's lower-powered Commander (which, incidentally, was equipped with overdrive) is really astounding.

For instance, an even five seconds was lopped off the time of the 0 to 60 mph runs, and an improvement of four seconds was indicated in the 50 to 80 mph runs. All other acceleration times were bettered, too; but the most surprising comparison is yet to come (we double-checked our figures twice before we convinced ourselves)—the '55 Studebaker President out-accelerated every '54 car in its price class in the 10 to 30 and 50 to 80 mph categories, and every '54 car in *any* price class from 0 to 30!

Now here's where we're going to save you some time. Put away that letter paper and pen! We'll explain how Studebaker is able to accomplish this remarkable acceleration with "only" 175 horsepower. You've heard us speak often of weight-power ratio. With the increase in horsepower from 120 to 175, the weight-power ratio has been lowered from 26 to 1 to 20.7 to 1; this, despite a test car weight increase from 3380 to 3620 pounds! This, plus the increased torque (60 more in '55) gives it that added jump.

Another factor that improves accelera-

tion is the low-gear-start feature of the automatic transmission. It's the same whether you have the select lever in DRIVE or LOW: 2.31 times the converter ratio. This makes it unnecessary for you to use the selector lever to get better acceleration. Formerly available only in Champion models, this drive next utilizes an intermediate (1.43) range, also with the converter, then shifts smoothly to direct drive. The new power of the Studebaker President gives it that desirable nimbleness in traffic. To us, it spells safety, because you can get out of the way of the other fellow in case of an emergency, not a bad ace in the hole for today's congested traffic.

While we're speaking of performance, how does the increased horsepower affect fuel economy? Before the '55s, the name Studebaker was legend as a car with a stingy appetite; it's been a consistent winner of the famed AAA-supervised Mobilgas Economy Runs. We're happy to report it will probably stay right up there holding onto its grand sweepstakes position, although our test results indicated slightly higher fuel consumption than last year's car (with overdrive) in each category. To make our comparison complete, here are the figures for your own amazement: testing the car at steady speeds of 30, 45, 60, and 75 mph gave an average fuel

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consumption figure of 18.8 mpg for the '55 President; the 120-hp '54 Commander average was 20.3 mpg.

When it comes to brakes, it's a slightly different story; last year the Commander's brakes stopped our test car in a shorter distance than the average car in its class. This year the footage was lengthened by an overall average of 10 feet; the brakes are the same, but the car is heavier and the coasting effect of the automatic transmission had to be overcome. With the engine off and gear selector lever in NEUTRAL, the power brakes held remarkably well, even after all the vacuum had been expended. The brakes were then no harder to apply than nonpower brakes. And there's still that exclusive Studebaker feature which prevents automatic-drive creep when you're sitting at a stoplight: that's its hill holder, standard equipment on President and Commander models and available at extra cost on Champions.

We've commented favorably on the excellent roadability of the Studebaker cars that we've tested since they introduced their popular hardtop coupe model in '53. If anything, this year's test sedan was even better in this regard, due presumably to stiffer shock absorbers.

Associate Editor Jim Lodge had this to say: "It's one car I've really enjoyed from a roadability angle. The Stude could be thrown brutally into a deliberate slide

that would wash out another car, yet in throwing it into a hard corner, you knew exactly how far it was going, how you could pull it out, and where it would come out. It was unnecessary to utilize its available power in cornering (most of the time) because of the confident way it went into and negotiated turns (handled by the steering alone). The driver is the master." Basically, other testers agreed with these remarks with the additional comment that when they took the Stude over rather bad dips, pitch was absent, a characteristic which has not been licked by some manufacturers.

"The ride is in no sense uncomfortable," comments Pete Molson, MT's Assistant Managing Editor, "but neither is it particularly luxurious; it is certainly not quiet. The noise of road strips still comes right into the car." Perhaps if they would install Fiberglas pads under the floor mats as they have in the roof panel, it would help to eliminate road noises.

The '55 hoods are wider, and slightly higher, but this change doesn't hurt the unusually good vision that you get through the windshield. Studebaker hasn't gone to the wrap-around yet, and actually, we felt no need for that design with this car. Vision is excellent without it.

The instruments are deeply set in two large circular dials, which are difficult to read at a glance as there is considerable

reflection. The speedometer needle is too slim for easy reading. The aircraft-type toggle switches for the lights, heater, etc., have larger shafts and are arranged handily for the driver.

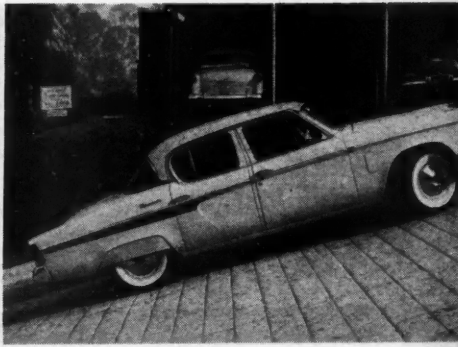
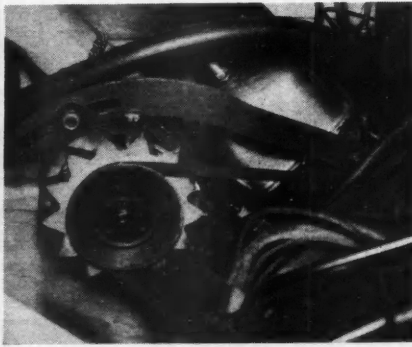
The seats are firm but fairly well-padded, and the front seat can be easily adjusted, something new for Studebakers. On quick stops, the seat still moves forward on its own volition. The upholstery fabric is attractive enough but not too practical if you use a car hard.

It's always hard to evaluate the first car of a new year, and when that car is actually a new series in the maker's line, the task approaches the impossible. Assuming that prices remain the same in other lines, Stude has one of the most compelling sales arguments in its favor, for the reborn President sells for \$193 less than the '54 Commander Land Cruiser, its closest comparable model. This brings it into a price spot where it can attract the interest of potential buyers of the Buick Special, Mercury, Dodge Royal, or Oldsmobile 88. The low-priced field will offer some new choices, too; not only has the Champion reduced its prices, but the Commander V8, with reductions of as much as \$287, is now well within that field. If these low-medium price field buyers want an eager car that it's almost impossible to embarrass, they'll be wise to try out the new President.

Sun visor has little function, rattled when buffeted by wind. Non-wrap-around windshield affords excellent visibility

Dipstick, battery, distributor are easy to reach and service, but plugs, below valve covers, are blocked by accessories

Parking President State sedan on hill for side-angle "glamour" photo proved value of hill holder and positive parking brake



TEST CAR AT A GLANCE

'55 Studebaker President State with Automatic Drive

(General Specifications on page 57)

REAR WHEEL HORSEPOWER

(Determined on Clayton chassis dynamometer. All tests are made under full load, which is similar to climbing a hill at full throttle. Observed hp figures not corrected to standard atmospheric conditions.)

46 road hp @ 1500 rpm and 36 mph
60 road hp @ 2000 rpm and 49 mph
73 road hp @ 2500 rpm and 60 mph
Max. 82 road hp @ 3200 rpm and 80 mph

TOP SPEED

(In miles per hour over surveyed 1/4-mile.)
Fastest one-way run 107.1
Slowest one-way run 102.7
Average of four runs 104.8

ACCELERATION

(In seconds; checked with fifth wheel and electric speedometer.)

Standing start 1/4-mile (66 mph) 19.4
0-30 mph 3.0
0-60 mph 13.2
10-30 mph 3.2
30-50 mph 6.2
50-80 mph 14.9

SPEEDOMETER ERROR

(Checked with fifth wheel and electric speedometer.)

Car speedometer read 33 @ true 30 mph
50 @ true 45 mph
66 @ true 60 mph
81 @ true 75 mph
109 @ top speed

FUEL CONSUMPTION

(In miles per gallon; checked with fuel flowmeter, fifth wheel, and electric speedometer. Mobilgas Special used.)

Steady 30 mph 22.6
Steady 45 mph 22.1
Steady 60 mph 18.5
Steady 75 mph 14.1

Simulated traffic over measured course 15.9
Tank average for 1021 miles 15.1

STOPPING DISTANCE

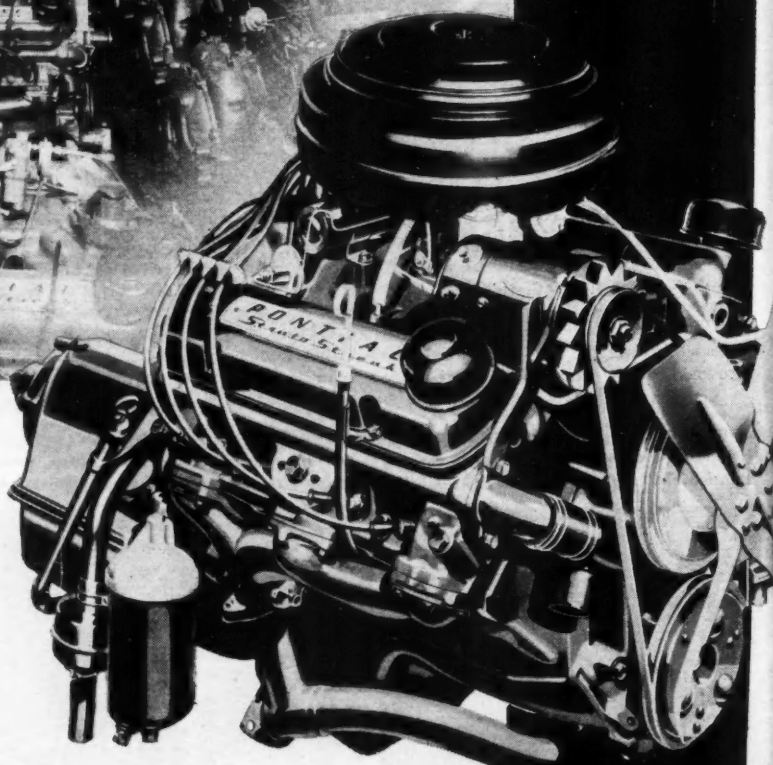
(To the nearest foot; checked with electrically actuated detonator.)

30 mph 44
45 mph 101
60 mph 174



With the advent of six completely new V8s in '55, plus modified versions of older V8 engines, the next time you buy a six may be your last.

By Don MacDonald



The Days of the Six are Numbered

PROBABLY NEVER AGAIN will we have so much that is new, automotive-wise, crammed into one announcement season. Besides completely fresh styling, or at least major facelifting, on practically every car, three of them will have overhead-valve V8s that are new from the engine mounts up. These are Chevrolet, Pontiac, Packard, and an almost wholly

new series of Chrysler Corp. engines being used in the Plymouth and in some models of Dodge and Chrysler. Actually, if you count the fact that a variation of the Packard V8 will appear in the Nash Ambassador and possibly the Kaiser, it totals up to eight.

Even the "older" postwar engine designs, such as Ford, DeSoto, and Stude-

baker, have been changed around and souped-up more extensively than in any previous one-year period. In the case of DeSoto and Studebaker, the usual dole of 10 horsepower per year was quadrupled to meet competition. These whopping increases will undoubtedly upset tooling amortization plans, which are normally based on a steady performance increase

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over a five-or-more-year period until the design potential is reached. It is said that Ford, on the other hand, broke with custom by planning about a 20 to 25 per cent turnover in tooling each year. This lends credence to their claim of a "new" engine for 1955, even though the basic design is only 12 months old. On this basis, they will have a new one every year in a never-ending cycle—a merry chase for the others.

These across-the-board horsepower increases would better be called performance increases. Everyone connected with the manufacture of automobiles is sick of measuring engine output in units archaically based on what one horse once did. As a measure of what the automobile as a whole will do, it is even more useless. In many cases, advertised horsepower figures for 1955 come from the sales and not the engineering departments of the factory concerned.

For those more interested in economy than performance, in-line sixes will continue to be optional in some makes and standard only in the Willys and Hudson. Their appeal is waning, however, and MT predicts that if you want one in 1960, you will have to buy it second-hand.

The winning axiom that there is no substitute for inches holds sway in 1955. Each of the three low-priced cars now has a V8 with more punch than the 1949 Cadillac, which, you'll remember, housed the most powerful of the first crop of postwar overhead-valve engines. Plymouth and Chevrolet have come up with new designs, as has Pontiac. A description of the Packard will have to wait, as the car will not be announced publicly until some time early in January.

PONTIAC "STRATO-STREAK"

The transparent plastic which covers the valves of the V8 jewel on our cover is, of course, not standard, and neither is the chrome-plated fan. Two versions of this engine, with over three million test miles behind their development, power the 1955 Pontiacs. Check Walt Woron's

driving impression on page 52 and you'll see that it really does *power* them. Languid Pontiacs are a thing of the past.

The engine is crammed full of firsts. It has a 90-degree block with the right-hand bank forward. This somewhat unorthodox arrangement was picked primarily to allow better location of the distributor, fuel pump, and generator. Compression ratio is 8 to 1, with an optional 7.4 to 1 for use with standard transmission. Maximum horsepower is claimed to be 180 or 173, depending on compression ratio. Torque checks out at 264 or 256 foot-pounds, which is good for a 287-cubic-inch engine, especially at the healthy low rpm of 2400. Pistons are aluminum and fit into an oversquare 3¾-by-3¼ bore and stroke.

Perhaps most interesting are the cylinder heads. They feature a completely different "ball pivot" valve train with stamped steel rocker arms that do not require the conventional shaft. Aside from a considerable reduction in the number of wear points, this design insures that the rocker arm contacts the valve-stem end squarely. The usual sidewise binding or scrubbing, which causes valve cocking and stem wear, is minimized. Tapered valve stem guides, a Pontiac first 23 years ago, are continued. New this year are hydraulic valve lifters.

Combustion chamber design is typical General Motors, with a wedge-shaped (Ricardo) chamber containing a large quench area to control detonation and increase turbulence. The chamber is beautifully machined to eliminate minute differences in compression ratio between cylinders. This expensive feature, not found in most engines, pays large dividends in smoothness of operation.

When you take your new Pontiac in for its first oil change, the station attendant will undoubtedly be taken aback by his choice of two filler openings, one at the forward end of each valve cover. It makes no difference which one he uses; their primary purpose is to act as twin inlets for the "pressure-suction" crankcase ventilation system. Fan-driven fresh air

circulates continuously through the valve covers and into the crankcase. A unique baffle arrangement directs the flow into all recesses, including the timing chain cavity. The high pressure differential required the use of a precipitator and oil settling chamber to prevent oil vapor from escaping through the rear-mounted suction-type air outlet. Pontiac's obsession with crankcase ventilation may seem unreasonable, but they know that slightly more than one gallon of water is produced for every gallon of gasoline burned. While most of the water (in vapor form) disappears out the exhaust, enough remains without adequate ventilation to be ruinous to any engine.

The cooling system retains a variation of the old straight-eight's "gusher valve" set-up, which essentially consists of using small, jet-like openings in brass distribution tubes (one in each head) to direct coolant straight from the radiator into jackets surrounding the valves and combustion chambers. The warmed-up coolant then proceeds to the block, where a sharp temperature differential is not too desirable, as it causes bore distortion.

Other features of the engine reflect equal attention to detail. The lubrication system, called "quad-gallery," is a far cry from the squirt-and-hope designs of the past. The five-main-bearing crank has overlapping main journals for greater rigidity and a harmonic balancer for greater smoothness. Carburetion is two-barrel, mounted on a manifold notable for its equal-length distribution pattern.

It took Pontiac 22 years to finally abandon in-line engines, and up until last year, there was nothing in the sales picture to indicate they should. Their conservative (but very loyal) clientele became a little restless in 1954, and sales were lost to power-minded competition. This year, we think that Aunt Harriet will get quite a kick out of her new Strato-Streak V8.

CHEVROLET "TURBO-FIRE"

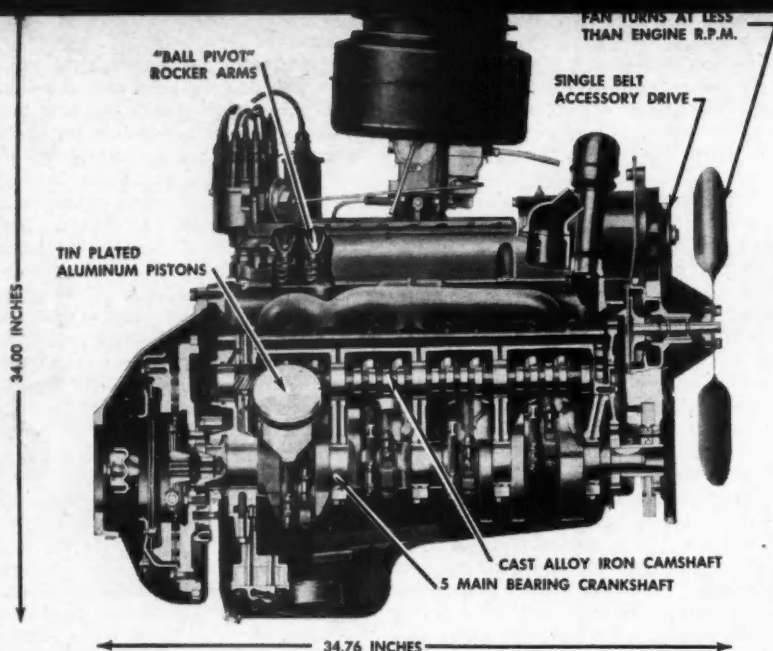
Some say that Chevrolet has been leery of V8s because their first one, back in



Chevrolet's Turbo-Fire V8

Both Chevrolet and Pontiac offer entirely new V8s with many features in common. The Turbo-Fire weighs less, but with its optional package it packs a wallop about equal to the Strato-Streak

Pontiac's Strato-Streak V8



Chevrolet's new engine is something of a masterpiece of compactness with power

1917, went over like a dull thud. Poor sales of the relatively expensive touring car pictured on page 10 nearly bankrupted the infant company and recovery came only when they concentrated on their Model-T-baiting, four-cylinder job. Down through the years, Chevy has stuck faithfully to ohv fours and sixes that were durable, reliable, and quite uninspiring.

In fact, the six is still the standard engine this year. The new V8 is listed as an option, and present production plans call for an equal quantity of both. After driving it (see page 56), we believe these plans will be subject to drastic revision in favor of the V8. Called the "Turbo-Fire," it is the brain child of Chief Engineer Ed Cole, who started on it three years ago when he came to Chevrolet from Cadillac.

With a stroke-to-bore ratio of 0.8 to 1, it is a close second to the Studebaker Commander for the honor of being the most oversquare engine in the industry.

Its compactness is little short of remarkable, as it squeezes 265 cubic inches of displacement in a block not quite 22 inches long. Space-saving design innovations are evident everywhere you look. For example, the intake manifold doubles as a tappet chamber cover. The engine doesn't depend on block overhang for rigidity as does Ford's current series. The lower extremity of the Chevy block is only about one-tenth inch below the centerline of the main bearing. This saves lots of weight, among these other advantages.

Ed Cole and his top-notch Chevrolet Engineering Staff have designed the smallest and lightest engine for its displacement mass-produced today. The four-barrel carburetor and dual-exhaust option, a combination good for 180 horsepower, puts it up among the leaders on a horsepower-per-pound-of-engine-weight basis. Torque at 2800 rpm with this power package is a whopping 260 foot-pounds. This is near-

ly a pound for every cubic inch of displacement, a figure heretofore unknown in the low-priced field.

The standard Chevy V8 is available in two versions, depending on whether you choose Powerglide or one of the two varieties of hand-shift transmissions. The only essential difference is that, with Powerglide, you get hydraulic tappets. There are some small variations in carburetion, but not enough to affect power output. Both engines are rated at 162 horsepower. As usual, the power package doesn't seem to have much effect on torque except to move the peak to a higher rpm. The standard two-barrel carburetor and single exhaust on this engine cuts it down only three foot-pounds, but it peaks at 2200 rpm.

One thing that struck us while driving the car was the unusual quietness and smoothness of the engine, especially the hydraulic tappet version. Much of this is due to a Chevrolet production first: every V8 that leaves the factory is electronically balanced after assembly. The engine is motored on a new machine (developed by GM Research and presumably available to other GM divisions if they want it) which automatically stops if it senses any unbalance. The crankshaft is in just the right position for two drills to take the right amount of weight off the front and rear counterweights. Instead of just the crankshaft, all the moving parts of the engine (including the clutch if so equipped) are balanced with relation to each other.

A glance at the cutaway front view of the engine will illustrate graphically how large the bore (3.75 inches) is in relation to the rest of the block. This is real handy when the design calls for the wedge-type (Ricardo) combustion chamber. Valve size is necessarily limited in small-bore engines of this school. Compression ratio on all the Chevy V8s is 8 to 1, but the factory claims that regular gas is adequate. Pressed steel rocker arms operate on ball studs, rather than shafts, in a manner quite similar to the new



Chrysler Spitfire (right) is typical of new engine series. They bear strong family resemblance to older design (left) used in beefed-up form for '55 in big Chrysler, DeSoto, and top-line Dodge

Chrysler's FirePower V8

Chrysler's Spitfire V8

Pontiac design. Exhaust valves are unusual in that their seats are aluminum dipped, a procedure aimed at minimizing valve burning problems. It's a new approach which you can be sure was thoroughly checked in proving ground operation before it went into production.

Those of you familiar with Chevrolet's former approach to the lubrication problem will appreciate the fact that every line in the system is integrally cast within either the block or heads. Oil capacity is a pleasant surprise, especially in this era of super-duper and super-costly lubricants. It holds only four quarts, not counting the filter.

PLYMOUTH HY-FIRE, DODGE RED RAM, CHRYSLER SPITFIRE

The late fall introduction of a very hot Dodge pick-up truck (MT, Nov. '54) gave everyone an underhood preview of not just the Plymouth, but a whole new series of Chrysler Corp. engines. Of similar basic design, but covering a wide range of power output, one version replaces the six in the Chrysler Windsor and another is optional in the Dodge Coronet and Royal series. The smallest one, called Hy-Fire (and in itself available in three forms—157, 167 and 177 hp) is optional in all Plymouths.

The blocks follow the design pattern set by previous Chrysler V8s, which incidentally are continued in beefed-up form in the Dodge Custom Royal series, all DeSotos, and in the bigger Chryslers. The main differences lie in the valve train and combustion chambers. These are only partially hemispherical, a fact which has caused some head-scratching and embarrassment in the advertising departments of the divisions concerned. Just what name can you use to describe half a sphere that isn't quite? Somebody came up with the coinage "polyspherical," but this will presumably be dropped as close study of the dictionary shows that these syllables describe a shape that is a geometric impossibility. We sympathize, but as of presstime, we are still awaiting the word.

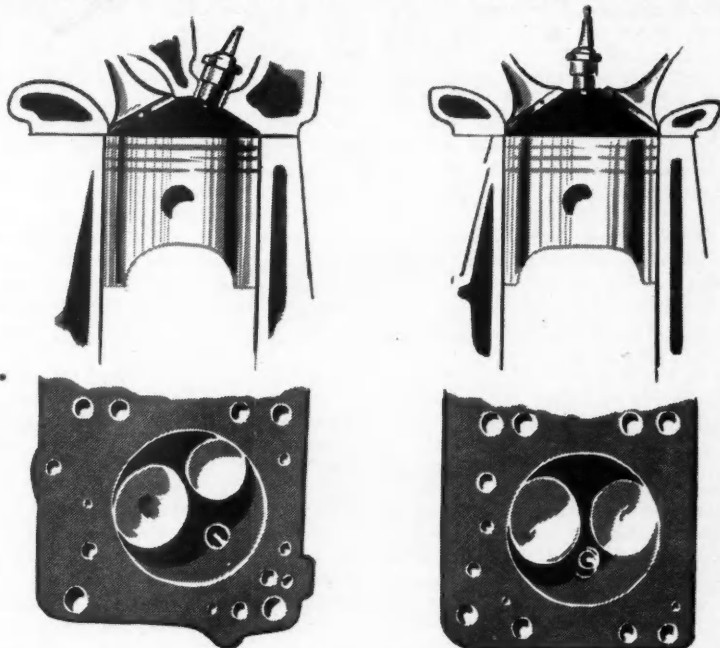
Valves in the new engines are located diagonally across from each other rather than directly opposite as in the older hemispherical series. This permits use of a single rocker shaft in each bank (the others have two). Garagemen and owners alike will be glad to know that the spark-plugs are back out in the open again. Chief Engineer Jim Zeder claims that the revised combustion chambers retain the desirable breathing qualities of the hemispherical type and have the same easy-going attitude toward octane numbers. In any case, the valve train is certainly a lot simpler.

Each of the three new engines uses hydraulic lifters, and an ingenious new valve lock allows the valves to rotate freely. Valve manufacturers like Eaton and Thompson, as well as the Ethyl Corp.,

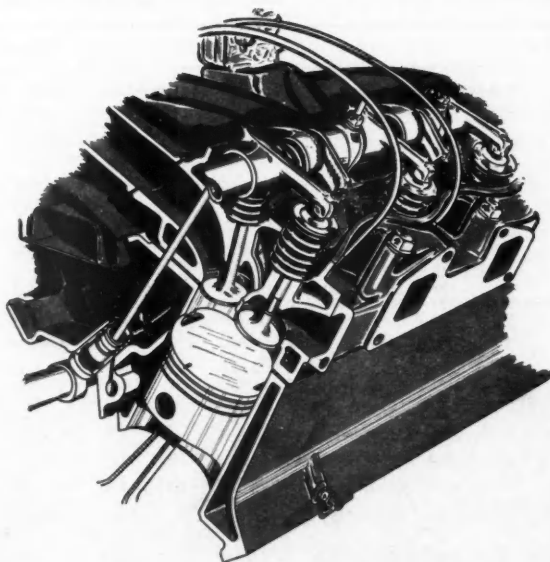
have plugged rotation for years, especially in truck engines. With the valve seating in a different position after each cycle, there is less of a tendency for the mating surfaces to spring leaks. The compressed, burning gasoline-air mixture can sear through the smallest opening with the ferocity of a blow torch, and you'll need a valve job a few miles later.

The table on page 28 gives the vital statistics for each of the new "kind-of-spherical" engines, and incidentally, shows

their basic relationship one to the other. Don't be confused by the new Red Ram; the old one is still with us, but is beefed-up and reserved for top-line (Custom Royal and Royal Lancer) Dodges with the designation "Super Red Ram." A power package is available (four-barrel carburetion and dual exhausts) for this one only, which boosts power to 193 horses. This could well be called the Newberg Special, because Dodge President Bill Newberg likes real going machinery and



Comparing the newer Chrysler Corp. engines with their traditional hemispherical counterparts shows more similarities than differences. Here are new (left) and old



VALVE DRIVE TRAIN

Most striking improvement in the new-type Chrysler engines is the simplicity of their valve train. They use a single rocker shaft in each bank instead of two

this one sure should go! Plymouth will have a similar package available for factory installation, putting out a healthy 177 at 4400 rpm. An important thing about these factory-controlled ventures into hot-rodding is that they do not void the warranty.

WHAT ABOUT THE OTHERS?

As could be expected, the rash of completely new V8s for 1955 has caused a flurry (perhaps storm is a better word) of activity amongst those who must live for yet another year or more with their older designs. The engineering departments of these companies this past year have taken on much of the flavor of the garage area at Indianapolis just prior to the last day of qualifying. Chrysler, for example, can't afford to be left standing at the spotlight by its newly agile kid cousin, Plymouth. The new power-package Chevrolet could well be nicknamed "Cadillette," a stop-watch fact which couldn't possibly be received with favor over on Detroit's Clark Street, where Cadillacs are made. Also, Benson Ford (in charge of Lincoln-Mercury) is keeping a wary eye on Henry's Ford Division.

FORD, THUNDERBIRD, and LINCOLN

The 1955 V8s, as we have said, are in a category by themselves. According to an unimpeachable source, the company has set up their engine program to allow for about a 25-per-cent tooling change-over each year. So, for the coming year (and those to follow), we have what amounts to a new engine, but not new in the sense that Pontiac or Chevrolet is new. Vital statistics show that the standard V8 has been bored and stroked.

The heads obviously involved new tooling because they incorporate Champion's radical "Turbo Charge" sparkplug with coolant passages rerouted accordingly.

This was researched by Ford Engineering Staff, but Champion solved all manufacturing problems, and there were many. Essentially, it is an 18-mm plug with a 14-mm-sized center electrode and ceramic. The excess space between electrode and shell solves fouling problems which phosphate-additive gasolines claim to but don't, at least in Ford engines. Another advantage is the tapered seat, which eliminates the need for a gasket. It is truly a Champion, Ford, Lincoln (and Mercury) first because it obviously can't be used as a replacement or optional plug on engines not specifically designed for it.

Ford's power package follows the trend to four-barrel carburetion and dual exhausts. In addition, the compression ratio is raised a notch. The Thunderbird engine (not available on other Fords except possibly the police Interceptor) looks, acts, and sounds very much like the forthcoming Mercury with its 292 cubic inches, 8.5 to 1 compression ratio, and 198 horsepower. Lincoln achieved its power boost by a 10-per-cent increase in intake manifold passage size as well as a high-lift cam, overbore, compression hike, and dual exhausts.

DESOTO and DODGE

The former baby V8s in the Chrysler family have a Hurricane Hazel quality to them these days. The most interesting DeSoto is the new Firelite, a version of the original Fire Dome that brings this series to about the two-thirds point (our guess) in its design potential. It is bored out to 3.72 inches, has a bigger valve area, boasts a high-lift cam, and mounts a

four-barrel carburetor. There is a good chance that dual exhausts may become a factory option, boosting power at the wheels. The 1955 Fire Dome has the same basic specs except for a normal cam and two-barrel carburetor.

What used to be Dodge's Red Ram is now the Super Red Ram, and with factory-installed power package, it puts out 193 horsepower. Dodge has followed much the same route as DeSoto with their two hemispherical engine options. You can have as much soup as you are willing to pay for. An interesting point is that bore and stroke (and consequently displacement) is the same on all three Dodge engines. While embarrassingly coincidental, this does not mean that the new one (the "semi" hemispherical Red Ram) has the same basic block. There were many detail changes for the one rocker arm.

CHRYSLER

FirePower for 1955 is claimed to be a sizzling version of last year's renowned horsepower leader. Presumably, the total increase (15) is derived from the one ratio jump in compression with the help of a redesigned four-barrel carburetor. This uses vacuum-controlled secondary throttles which come into operation when the primary throttles are more than halfway open. Other dimensions remain the same as last year, and, of course, dual exhausts are standard. These, incidentally, help only road horsepower (that measured at the rear wheels).

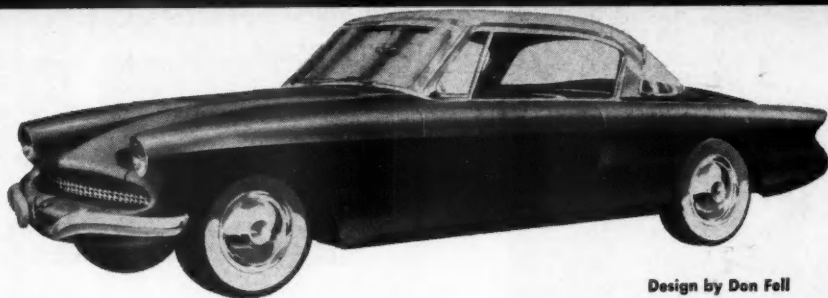
AND THE FUTURE?

Perhaps the greatest impact that the new (and revised older) V8s will have on the car-buying habits of the nation is the final end to the notion that best economy stems from (Continued on page 46)

THE NEW V8s

Make	Advertised bhp @ rpm	Torque (lb.-ft. @ rpm)	Bore & Stroke	Displace- ment	Comp. Ratio	Carbu- retor	Dual Exhausts	Model Availability	Remarks
Chevrolet Turbofire Power Package	162 @ 4400 180 @ 4600	257 @ 2200 260 @ 2800	3.75 x 3.0 3.75 x 3.0	265 265	8.0 8.0	2-barrel 4-barrel	No Yes	All All	Powerglide-equipped cars have hydraulic tappets, others mechanical; same on optional six
Chrysler Spitfire Chrysler FirePower	188 @ 4400 250 @ 4600	275 @ 2400 340 @ 2800	3.63 x 3.63 3.81 x 3.63	301 331	8.0 8.5	4-barrel 4-barrel	No Yes	Windsor New Yorker Deluxe, Imperial	Six discontinued New Yorker discontinued
De Soto Fire Dome De Soto Firelite	185 @ 4400 193 @ 4400	245 @ 2400 274 @ 2400	3.72 x 3.34 3.72 x 3.34	291 291	7.5 7.5	4-barrel 4-barrel	No No (?)	All All	Six discontinued High-lift cam
Dodge Red Ram Dodge Super Red Ram Power Package	175 @ 4400 183 @ 4400 193 @ 4400	240 @ 2400 245 @ 2400 274 @ 2400	3.63 x 3.25 3.63 x 3.25 3.72 x 3.34	270 270 270	7.6 7.6 7.6	4-barrel 4-barrel 4-barrel	No No Yes	Coronet, Royal Custom Royal All	Six available in Coronet only Available with all transmissions Available with all transmissions
Ford Y-Block Power Package Ford Thunderbird	N.A.* N.A.* 198	N.A. N.A. N.A.	3.62 x 3.60 3.62 x 3.60 3.75 x 3.30	272 272 292	7.6 8.5 8.5	4-barrel 4-barrel 4-barrel	Fairlane & Wagons Yes Yes	All Fairlane	Six optional all models Available with Fordomatic only 190 hp and 8.1 to 1 CR with 3-speed overdrive transmissions; chrome engine dressup kit available
Lincoln Plymouth Hy-Fire	225 @ 4400 157 @ 4400	332 @ 2500 217 @ 2400	3.94 x 3.50 3.44 x 3.25	341 241	8.0 7.6	4-barrel 4-barrel	Yes No	All All but bus. cpe.	Turbodrive transmission standard Six optional except convertible; standard in business coupe
Plymouth Super Hy-Fire Power Package	167 @ 4400 177 @ 4400	231 @ 2400 231 @ 2800	3.56 x 3.25 3.56 x 3.25	260 260	7.6 7.6	4-barrel 4-barrel	No Yes	All but bus. cpe. All but bus. cpe.	Available with all transmissions Available with all transmissions
Pontiac Strato-Streak Pontiac Strato-Streak	173 @ 4400 180 @ 4600	256 @ 2400 264 @ 2400	3.75 x 3.25 3.75 x 3.25	287 287	7.4 8.0	4-barrel 4-barrel	No No	All All	3-speed transmission only Hydra-Matic only
Studebaker Pacemaker Studebaker Wildcat	140 @ 4500 175 @ 4500	202 @ 2800 250 @ 3000	3.56 x 2.81 3.56 x 3.25	224 259	7.5 7.5	2-barrel 4-barrel	No No	Commander President	Mechanical tappets Mechanical tappets

*Ford officials would not talk power as of presstime. MT predicts they will claim 165 hp for standard V8, 185 for power package.



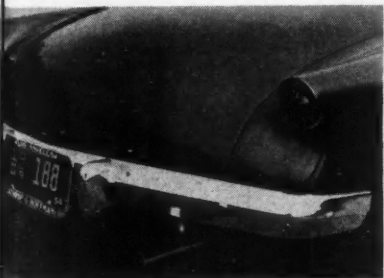
Design by Don Fell

Gilding the Lily

By Herb Spencer

An imaginative automobile dealer improves the looks of an already beautiful car—a '54 Studebaker hardtop

Photos by Tom Medley



Above: Deceptively simple-looking re-padding has made two roomy but form-fitting bucket seats from original bench; radio, glove compartment separate them. **Below:** Tail lights echo headlight shape

HOW IN THE WORLD to customize a Studebaker hardtop without concealing its original beauty? First, take an unusual dealer, Lathrop G. Hoffman of Los Angeles, whose staff is imaginative and creative; add MT's staff artist Don Fell, who has a keen interest in automotive design, and you have your answer.

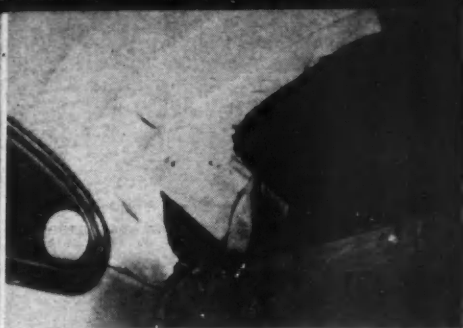
The exterior work consisted mainly of sharpening character lines already in the car, and of removing the few unnecessary decorations. A made-to-order grille fills the large scoop, while hooded headlights and flush wheel openings emphasize the

long fender line. This is unbroken, since the Stude side vents have vanished. As the fender reaches the rear, it extends still farther, for all chrome has gone from its top edge and the wheel opening here, too, is a perfect circular arc. One result of this is that the airy superstructure appears even lighter than in stock models.

The car has two bucket seats in front, separated by a wood console that holds the radio, glove compartment, and Studebaker's array of toggle switches. Standard white vinyl upholstery has been reworked, and also covers the crash pad.



Door handles, chrome ornaments, and cowl vents gone, wheels take over accent role



DO IT YOURSELF

Replacing Headlining

A Photo Story by Paul Everton and Andy Clark

IF THE HEADLINING in your car is merely soiled, a recommended cleaning agent (the foam-type cleaners are good) can often restore its freshness; but what if the headlining is torn? If you're handy with such basics as scissors and a tape measure, and have access to a sewing machine, then you can invest your time and the cost of a little material and make a new headlining for your car.

Material can be purchased at most auto supply houses or at seat cover shops. You can use stock-type material or you may want to make a more practical headlining out of plastic material. (If you have the time and want to display your talent—or if your wife can lend a hand in the sewing department—you may want to use a little more material and turn out a custom pleated job with padded rolls!)

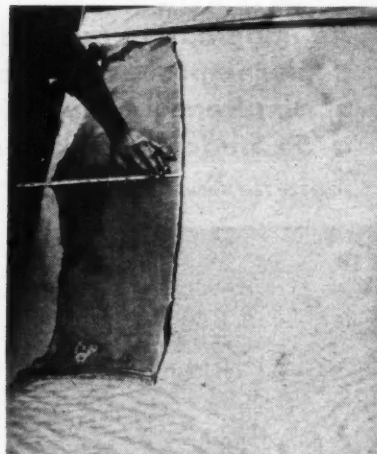
Do all the marking and cutting on the "wrong" side of the material. Draw an exact centerline on the material and a corresponding line on the roof of the car; lining up the two centerlines as you install the headlining will insure a neater job. If the finished headlining reveals a few wrinkles, don't worry; wiping the material with a clean sponge dampened with hot water will usually smooth the surface.



Remove window moldings, other fittings; lay out headlining, remove bows and set aside in order, mark sections as shown



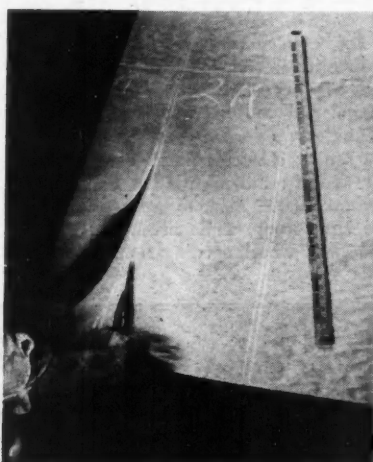
Cut seams carefully with razor blade; each section will be traced on new material. Ends require three-inch overhang



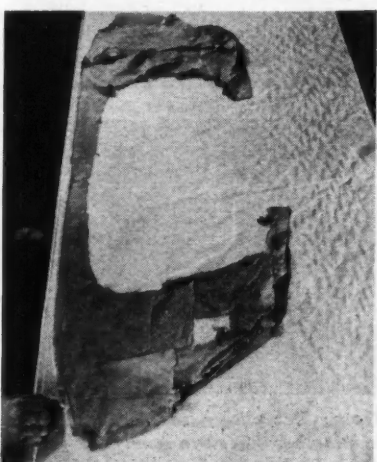
Mark centerline on new material, then line up old headlining for tracing. Allow one-half inch edging for seam allowance



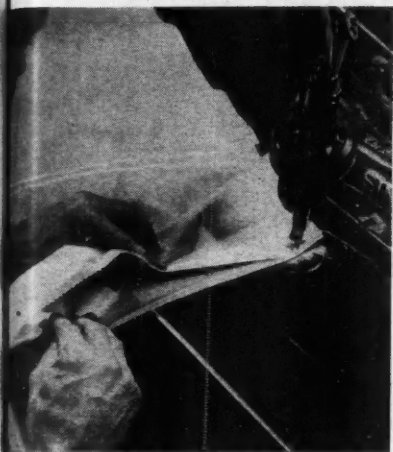
Provide overhang (for tacking) on front piece, then start tracing, following each curvature as on the old headlining



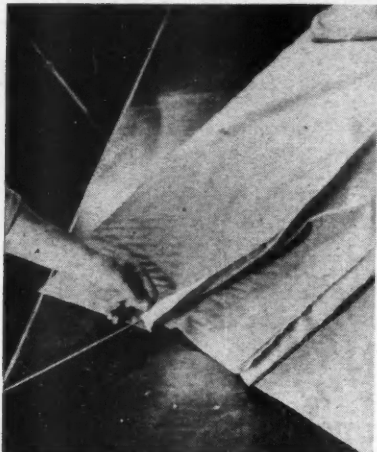
Cut out excess material after each section is marked to avoid following wrong guide line. Be sure to provide seam allowance



Rear section may be too wide for cross-cut on new material, will have to be cut lengthwise; side sections may be sewn on



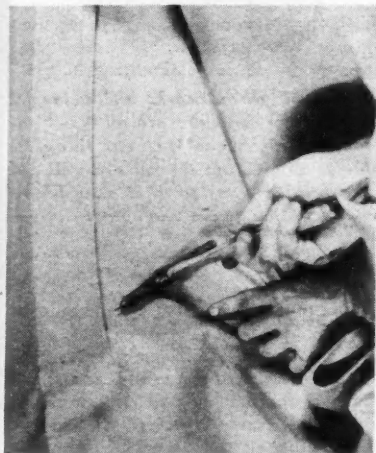
Keep material taut when sewing sections and listings ("sleeves" that hold the bows in place); start with center sections



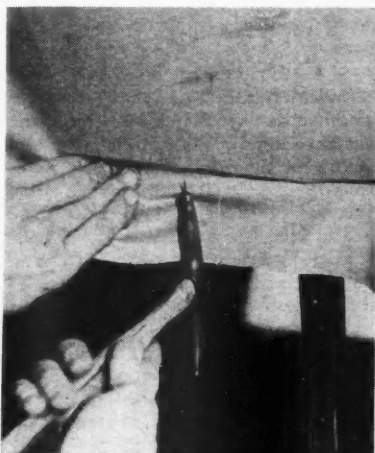
Starting at front, insert bows in listings in same order that they were removed. Centering bows eases later installation



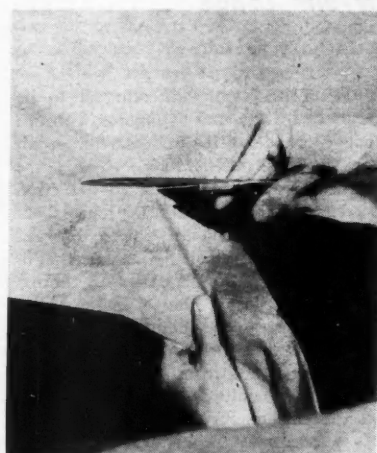
Attach bows starting at rear. It may be necessary to cut the listing just enough to allow headlining to be pulled tightly



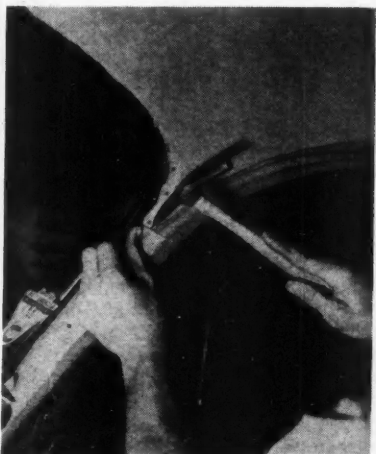
Be extremely careful to keep the seams straight when anchoring new headlining to tack-strip around rear window molding



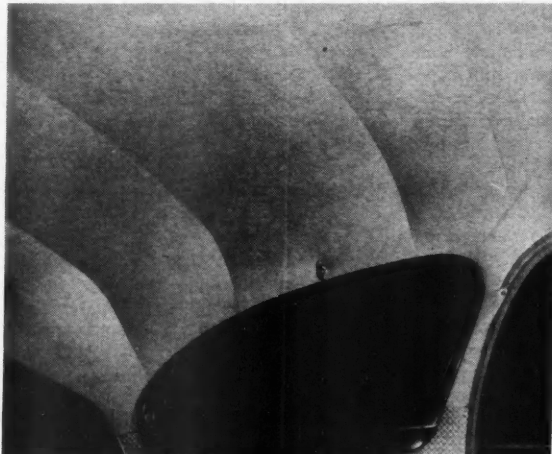
Start at center of window and tack cloth to tack-strip, first at rear, then at windshield header. Pull the material smooth



Pull sides just tight enough to take out wrinkles; cut off excess material, leaving enough to tack along the window strip



Completing the installation part of your do-it-yourself job, tack headlining trim onto tack-strips and finish off the ends



With window moldings, visors, and dome light in place, headlining should look factory-new. You may want to try two-tones or unusual textures for a really new effect



'55 MG Magnette

A new four-door running mate to the popular, more powerful roadster may boost MG sales to a new high

By Jim Lodge



THE FIRST truly different car to be produced by the Abingdon concern since World War II (and the first sedan since the 1250 cc YB-MG of '46-'47), the Magnette Series "ZA" is a contradiction in tastes. Its four-cylinder, 60 horsepower engine supplies enough power to meet the demands of small-car enthusiasts in this country, yet to get the car rolling, you've got to work the available power through a four-speed, floor-mounted gear-shift—an unlikely choice as the preferred method of getting from a start to cruising speeds in a family-type car. But therein lies the clue to our uncertain reaction to this test car. We looked for a car built for the American market. Instead, we found a truly British car, but one that in some respects caters to our likes and in others remains loyal to the Crown—with some Detroit thrown in to improve Anglo-American relationships and sales.

Let's take it from the beginning—your first glance at the car. Some onlookers likened the Magnette to an Italian "works" car—an Alfa-Romeo or Fiat sedan; front fender chromework went nearly unnoticed; the grille, while unmistakably MG, gives a flowing line not often associated with the roadster. What its effect will be on the TC-through-TF addicts, we don't know—but it harmonizes well with the Magnette's overall styling.

Stepping into the interior, you'll find handsome leather upholstery and sedate, gleaming walnut paneling and moldings. The front seats (bucket type, separated by an emergency brake) are well padded, and have the fit only a bucket seat can provide—(they reduce passenger-rocking sideway immeasurably). Before we explore the rest of the car, let's take advantage of those sports-car-like bucket seats and go for a ride.

Under way, shifting is a cinch—the lever almost moves by itself to the next gate; but speedshifting is something else. Obviously set up to accommodate a right-hand drive, the floor-shift cants far to the right (a fairly long reach, even for those used to a floor-mounted lever), and must be guided carefully out of second and to the right, and upward to third gear—to avoid a clash with first gear. Reverse gear could not be engaged accidentally; its position at far "left and down" is well out of the way of other gear positions.

If you've driven imported sports cars or sedans before, you'll appreciate the foot space around the Magnette's pedals, and the Americanized feel of the suspended pedal setup. The slender accelerator pedal can be mashed down with a brake application from a size 10 or 11 shoe, but after a few blocks of stop-and-go driving you'll find it's easy to avoid all pedals save the one you want.

In the Magnette's favor are: noticeably absent wind noise at any speed; an exceptionally legible speedometer; good forward vision (you sit high, the hood is short and slopes downward); and last, but not least, the Magnette is blessed with good roadability for a short, narrow-treaded (51-inch) sedan. The Magnette imparts no feeling of absolute confidence in tight, fast turns, due to a feeling of top-heaviness, yet it holds the road remarkably well, and drifts, rather than breaking suddenly, to the outside of the curve when taken up to its maximum point of stickability. Heel-over is apparent, but does not affect the Magnette's road-holding ability.

Performance-wise, the Magnette feels somewhat sluggish, but it fares better than most other imports in the small sedan class. Getting to 60 (just short of the

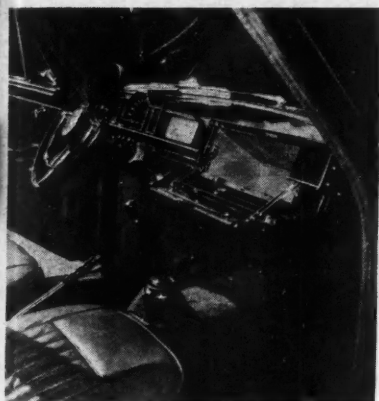
Restrained chromework, well-balanced body design brought praise from onlookers. Grille made Magnette recognizable as an MG, but the car's overall appearance led many to think that design was of Italian rather than Anglo origin

quarter-mile speed) from a standing start takes 22.5 seconds. Its 50-75 time averaged 29.1 seconds. Top speed checks were not made, largely because the car was not suitably broken in or tuned for sustained top speed runs; however, checking it against the electric speedometer during the 50-75 mph acceleration checks, we ran it up to 84 mph. Considering mileage covered to attain this speed, we felt the car could do little better on our top-speed strip under ideal conditions.

During standing-start accelerations, the Magnette protested with a violent shudder through its drive train before it got under way. Second gear was the most proficient; fourth was not needed in quarter-mile or 0-60 runs. In line with our policy for testing a car with a four-speed transmission, 10-30 runs were made in second gear, and 30-50 runs were made in third and fourth gears.

A fuel-conscious car, the Magnette produced economy ranging from 30.2 mpg at 30 mph to a consistent 20.9 mpg in traffic. The "driving around," or tank average (excluding acceleration runs) of 22.1 mpg is one of the Magnette's best recommendations as a second family car. Excellent brakes (as good in every respect as those on the TF) and an easy-to-apply suspended brake pedal seem an indication that the Magnette carries on a heritage of above-average stopping ability.

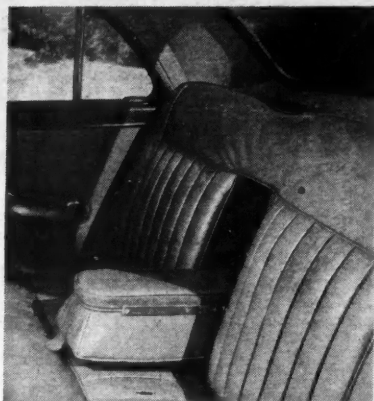
Now that the test ride's over, we can



Magnette's interior is well finished, has rich, polished walnut moldings, deep-pile carpets, good-looking leather upholstery



Although built on a short, 102-inch wheelbase, four-door MG sedan has roomy trunk. Fuel pump is behind tire



Rear seat is well padded, comfortable, shouldn't show wear for many years. Legroom is fair, headroom quite good

Photos by Tom Medley

get back to exploring other features of the MG sedan. The rear passenger compartment is comfortable—if the front seats aren't pushed to their rearward limit. (The Magnette's front seats have a back-and-forth adjustment that will suit everyone in the family.) The rear seat is equipped with a fold-down armrest, and there's an abundance of toe room under the front seats. Seating is comfortable for two, but elbow room decreases alarmingly when three people sit in the back seat. Head room is genuinely good for a car of this size. For those who have not yet seen a Magnette on the road, here's a compari-

son of the new MG sedan with one of our own small cars, a '54 Rambler two-door: The MG Magnette "ZA" is an inch lower than the Nash, 11 inches narrower, and 16 inches shorter overall.

Of interest to prospective buyers are: plenty of space for the driver and front seat passenger, a nicely finished, durable-looking interior, and a good-sized trunk.

Under the hood, you'll find what looks like the TF's engine with the carburetors on the opposite side of the block. But while basic engine design is the same, there's a difference under the skin: The 60-bhp powerplant utilizes smaller (dual)

S.U. carburetors; its 1489 cc (90.84-cubic-inch) displacement comes from a 2 $\frac{1}{8}$ -inch bore and a 3 $\frac{1}{2}$ -inch stroke.

The new roadster engine, by comparison, has a bore smaller by 0.04 inches, and the same stroke; the TF's 1466 cc (89.46 cubic inch) engine puts out 64 bhp. Torque and bmep figures were not available at press time; also unavailable were the compression ratio and the brake horsepower rpm. (Compression ratio should be approximately the same as last year's, 8 to 1, and an MG spokesman supplied the unofficial 5200 rpm figure in The Story in Figures, page 44.)

1 $\frac{1}{2}$ -Liter MG-TF

WE'LL USE THAT COMPARISON of the two MG engines as a jumping-off place for the TF's performance analysis. Unchanged structurally or stylewise, the '55 MG sports roadster boasts 6 $\frac{1}{2}$ more horsepower than its 1250 cc (76-cubic-inch predecessor. This increase formed the basis of MT's test of the new model, and resulted in a promising performance boost.

In the standing-start quarter-mile, for instance (speed, 65.5 mph, using first, second and third gears), the '55 MG-TF turned 20.8 seconds; it reached 60 mph in 17.3 seconds. These times are faster than last year's by 1.8 and 4.9 seconds, respectively.

Where the '55 model really stood out was in the 50-75 acceleration checks; its average time of 24 seconds is nearly nine seconds better than the '54 car's time. An increase in displacement actually improved the TF's already-excellent economy at highway speeds. (Continued on page 44)



Roadworthy MG-TF roadster shows its new, 1 $\frac{1}{2}$ -liter punch by powering out of a turn. The '54 version not only performs better, but costs some \$200 less

OPERATION M. O. P.

(MAIL ORDER POLICE)

An MT reader makes a proposal to curtail the capers of the "smart" auto drivers who jeopardize the lives of all motorists

By Melville D. Shine

WEAIVING WILLIE wove his way through the homebound commuter traffic. Precision pouncing from one lane to another whenever the smallest slit of daylight appeared between cars was part of Willie's driving pattern. Often he heard brakes squeal behind him and perhaps an occasional crash, but it never occurred to him that he might be responsible for an accident, or that he could be guilty of leaving the scene of an accident that he himself had caused.

Home at last, Willie feels he has saved at least 20 minutes in his lane-hopping drive home and, of course, isn't the type to realize that he gained two minutes at the most. He sits down to relax over a beer, presumably on time borrowed from those saps who were courteous enough to let him get through the tight spots.

After glancing at the paper, Willie curiously tears open a letter from the Bureau of Motor Vehicles. It contains a printed card:

Bureau of Motor Vehicles
Sept. 1, 1954

Mr. Willie Weaver
Operator's License 12345
1401 Fourth St., Weaverville, Ind.

Three separate disassociated licensed operators have reported you on three separate occasions within three months for:
Unsafe cutting-in.

This is an educational warning to study your driving habits and correct this fault.

The cards that prompted Willie's warning had been mailed in by conscientious drivers who obtained them gratis from a road safety group cooperating with the

vehicle bureau. Here is how they looked:
Bureau of Motor Vehicles
Indianapolis, Ind.

I want to report a clear case of unsafe driving. It occurred on (highway or street) at or near (intersection or town) on (date) around (time). The car was a (make), license going (direction), and the driver was guilty of:

To the best of my knowledge neither I nor anyone I know has reported this violator during the past three months.

Signed
My operator's license.....

Now, the new safety education program had had plenty of publicity, and many motorists were displaying stickers on their cars that said "Clean up dangerous driving with M.O.P.!" So Willie knew why he had received the card. But, of course, he felt that the charges were unfounded—"Who, me?" Yet he also knew that if he did not change his dopey driving he could receive another letter:

Bureau of Motor Vehicles
Nov. 1, 1954

Mr. Willie Weaver
Operator's License 12345
1401 Fourth St., Weaverville, Ind.

In addition to the three previously mentioned cards, we have, during the past two months, received two more cards from disassociated licensed automobile operators, advising that your driving habits show:

Unsafe cutting in.

You are hereby advised to report to the

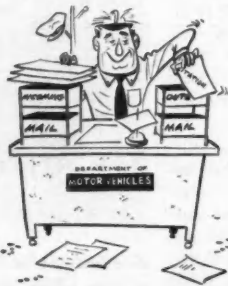
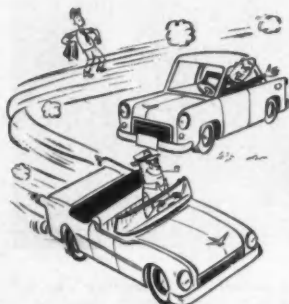
nearest office of the Bureau of Motor Vehicles to receive safe-driving instruction and a highway driving examination. Cost to you will be \$10. Penalty for failure to report within 10 days will be suspension of your license. Bring this letter with you.

Of course, all this never happened. But Willie's antisocial brethren are an all-too-familiar part of the U.S. driving scene. Weavers like Willie are among the most annoying of all offenders. Yet how about those who ride your back bumper, the lane-straddlers, and, of course, the "drivers" who labor under the delusion that a quiet, child-inhabited suburban street is the Indianapolis Speedway and that they are trying to hold a half-lap lead?

We used Weaving Willie as an example because he is an unusually difficult type to catch. He has found that the people he cuts in on are defensive drivers, and he knows (he hopes) that they will give ground to avoid an accident. Occasionally a highway patrol officer tags him, but the very fact you can see his local double going through the same routine each day proves we haven't found the remedy.

Perhaps a good way to set the ball rolling would be to concentrate on just one obvious driving fault. No doubt legal problems would beset the "Mail Order Police," but it would be worth a try.

NOTE: We had mixed reactions to this one. What do you think? Would it solve any problems? Would it build a nation of serious drivers, or one of stoolpigeons? MT will publish selected letters on the subject.—The Editors.



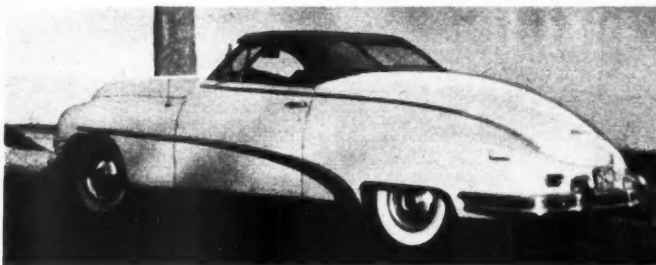
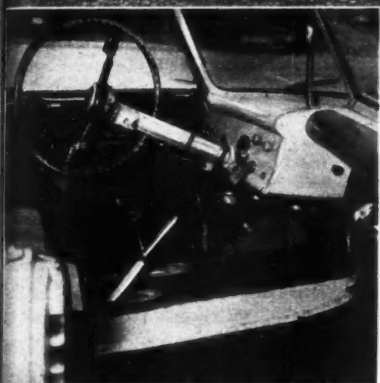
The Readers CUSTOMIZE



Tom Medley

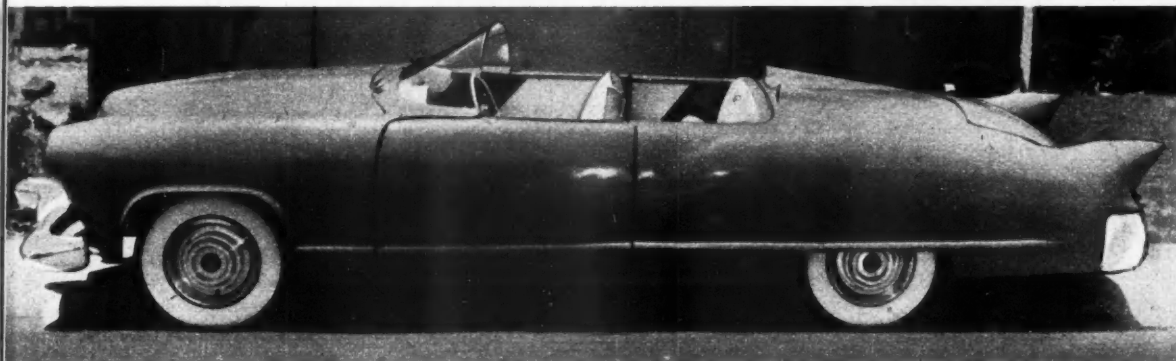
STOCK CARS seem to retreat far into the background when confronted by Leonard Thompson's roadster. The Seattle (Wash.) beauty, based on a 10-inch-shorter Ford chassis, pulls easily away from the crowd with its '52 Cadillac (190-bhp) engine. The single Buick-type vent on

each side is completely functional—see the small photo at left—as are the folding steering wheel for easy entrance and a center pad (not shown) that can hold a third passenger. One-piece windows swing open with the electric doors that let Mr. Thompson into his five-time-first-prizewinner.



William Don Lynch

PUBLIC OPINION varies, writes William Don Lynch, of St. Paul, Minn., in regard to his Carson-topped '48 Packard. A steel sedan top has replaced its open tonneau, while the original top controls now open and close the deck lid. Note how the Buick "spear" complements the rear line.



William D. Dailey

EL LOMPO (Lightning), once a '52 Kaiser two-door sedan, uses sundry Cadillac parts with a dash of San Francisco owner Manuel Daniluke's special brand of ingenuity. That was a Cadillac windshield,

for instance; ditto bumpers and fenders. Those rear seat headrests, though, are strictly Daniluke, and so is the narrow rear seat that makes this stock-length car look inches longer. Clear plastic channel will bind

windshield and side-window edges to preserve the smooth lines, and white plastic will cover the twin headrests. The car would hang together better as a design if the rear fender fins were subdued.

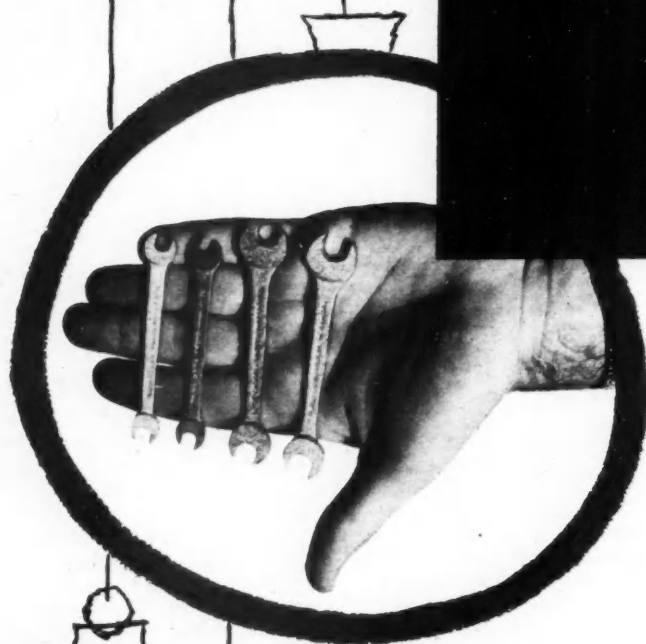
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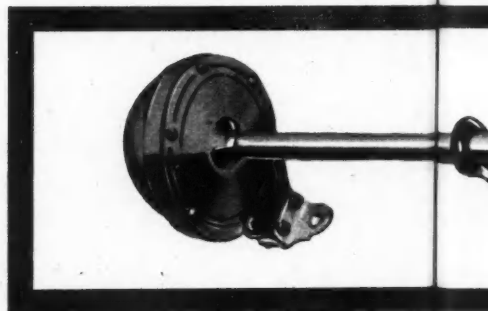
In sizes from 13/64 to 3/8-inch, this wrench set is \$1.00 from Vogel Tool Co., 11600 W. Pico Blvd., Los Angeles 64, Calif.



Plug that new shaver into Kar-Shave for real in-a-car convenience. Kar-Shave, 3456 Glendale Blvd., Los Angeles, Calif.



Imported from Germany, Motorist's Computer costs \$1.75, gives your average speed, economy, other trip facts. Pacific Importers, Box 461, Camarillo, Calif.



CHRISTMAS SHOPPING can be a trying experience — especially when that "Five Shopping Days Left 'Til Christmas" warning appears in the evening paper. But when you have a car, a motor-minded man, or a too-young-to-drive enthusiast in the family, it's a cinch to pick out a gift that's bound to make a hit.

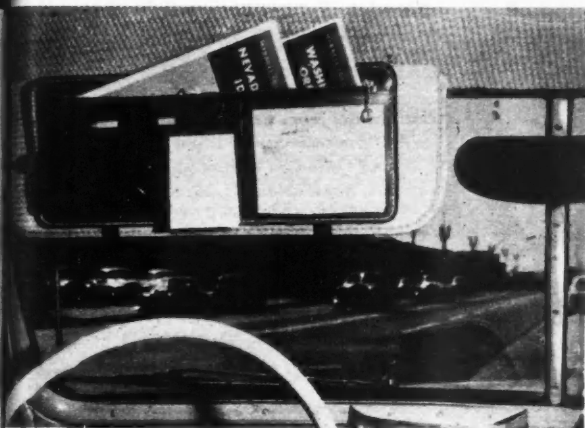
MOTOR TREND's editors, in picking out suggestions for this year's "Gifts for Your Car" feature, kept everyone in mind (and dropped a few hints of our own around the house) with dress-up accessories, and gifts for motoring pleasure and driving comfort. If you want something for yourself and don't see it under the tree, well — if your car's been pretty faithful to you during the year, why not buy that gift, and give it to your car?

Few Christmas choices can promise so much year-round pleasure in a car-minded country

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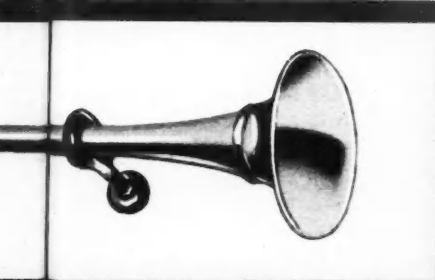
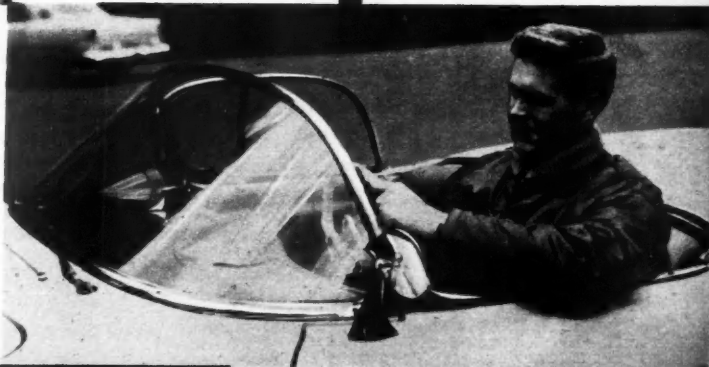


Early shoppers will find the Travel Visette at department stores and auto supply houses. About \$2.00 in luggage tan color.

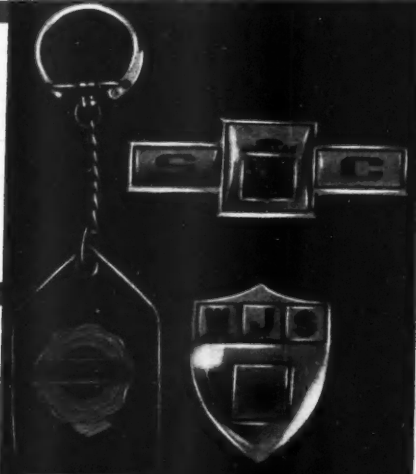
A gift with real warmth, the down-insulated Alaska sports car jacket gives comfort and plenty of arm freedom. Blue, scarlet, green, brown, \$34.50. Sizes 36 to 48. Alaska Sleeping Bag Co., 309 S.W. Third Ave., Portland 4, Ore.



Mapak is a must for the traveling man; holds maps, business route cards. Suede finish. Cost, \$1.00 from Mapak, 604 N. London Ave., Rockford, Ill.



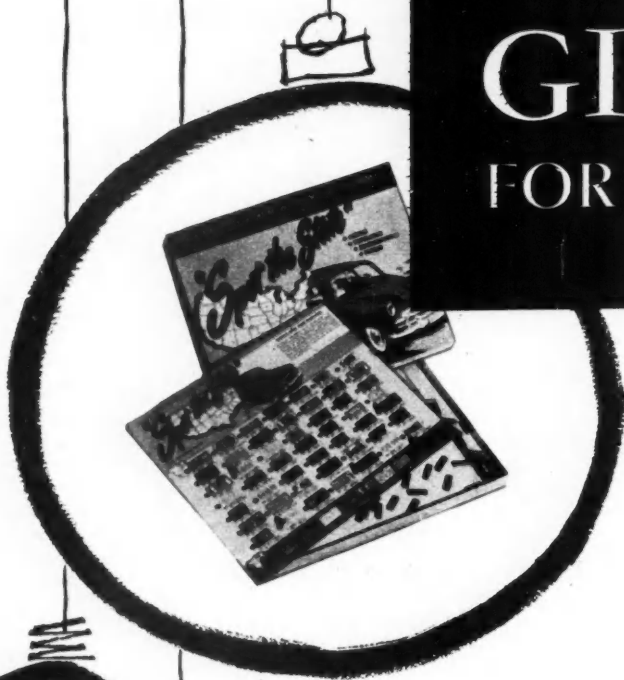
A good-looking warning device is this chromed-brass electric horn with air-horn power. Sparton Automotive Div., Sparks-Withington Co., Jackson, Mich.



Key chain and car dress-up insignia (for doors or dashboards) with car crest and insignia. Available at car dealers or at auto supply stores everywhere.

CONTINUED

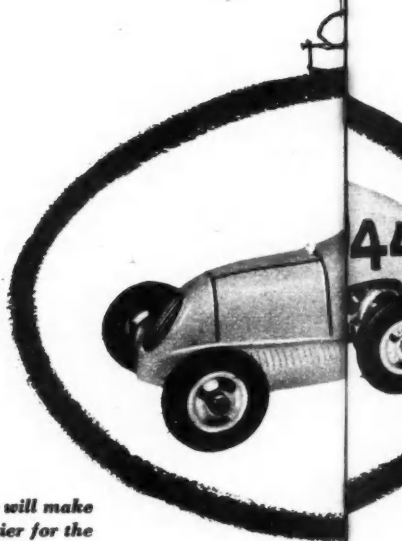
GIFTS FOR YOUR CAR



Enthusiasts from six to 60 will enjoy "Spot-the-State" when traveling. U.S. and Canadian license plates, capitals, population. \$1.25. Stephens Co., 11 Hill St., Newark 2, N.J.



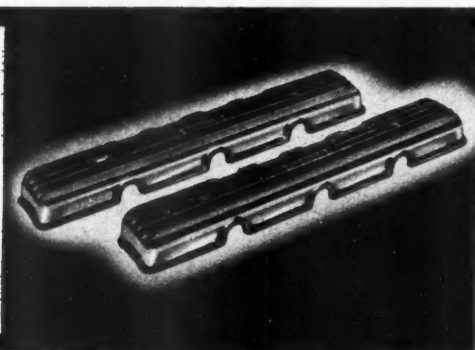
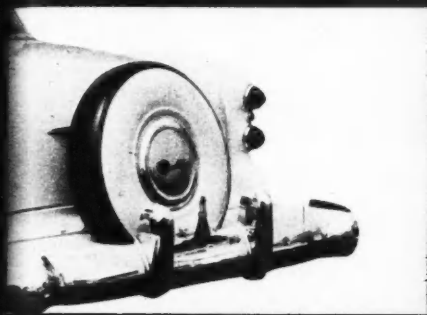
This imported map measure (reads statute miles, nautical miles, kilometers) is \$1.95, comes in leather case. Converts miles to inches, inches to miles. Watch-type movement, nickel-plated case. Swifto Traders Unlimited, Box 632, Danville, Ill.



This 40-mph racer will make Christmas even merrier for the model fan. \$9.95 ready to run. You assemble it yourself in an hour. America's Hobby Center, 152 West 25th St., New York 1, N.Y.



The Aero-Base custom aerial mount is \$1.50, can be installed in seconds. Chrome with red finish. Specify make and model car. Berma Industries, Inc., 216 W. 86th St., Minneapolis, Minn.



Auto Discount Co.'s low-cost tire carriers (far left) start at \$42.85. Write 1529 T50 Victory Blvd., Glendale 1, Calif. Have a Buick owner on your list? Weiland's shiny sparkplug covers may be just the thing. Weiland Speed and Power, 2733 San Fernando Rd., Dept. P-2, Los Angeles, Calif.

Top grade chamois skins (one heavy, one medium weight) are a good car-care gift. These are \$5.95. Hoyt and Worthen Tanning Corp., Haverhill, Mass.



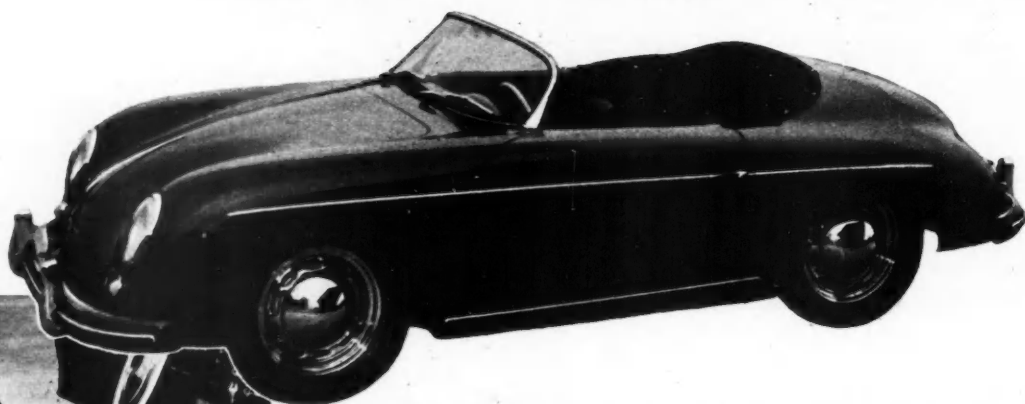
Key-Pact saves the low-cost gift problem; a natural for that "something extra," it comes in green, red, brown. \$1.00, 25 cents for monogram. Clayter Corp., 10 W. 33rd St., New York 1, N.Y.



These Revell miniatures are sold separately, or come with three other scale models in a special gift set (with paints, brushes, cement) for \$4.95. Get yours early at hobby shops, department stores.



e u r o p e a n



THIS IS A SAD STORY. We have just seen the '55 Porsche 1500 Speedster, by any yardstick one of the most attractive cars on the road and a fairly startling value at \$2995 delivered at ports of entry. Why is it a sad story? We don't have \$3000!

The Speedster's appeal is made up of many things. There's not an extraneous gadget on it. Its lines flow from the typical rounded nose with a total lack of effort.

You know already, when you hear its name, that this car has been put together with tender care and enviable skill. The doors hang from a beam strong enough to hold up an office building. Bucket seats hold you firmly; two straight-through slots in the seatback cool your back; the seat moves so far that any sideshow character, from the midget to the giant, could drive with ease. (If you want to, slide the passenger's seat right off its rails, and leave

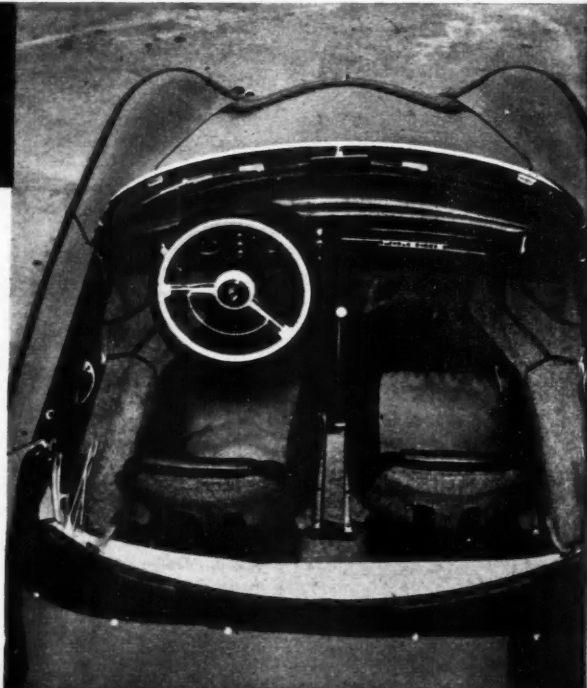
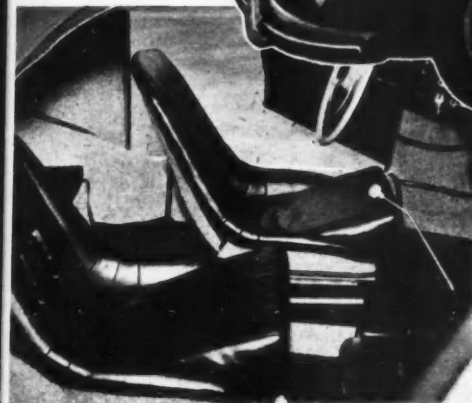
it at home.) Two children can ride in the leather-and-carpet rear seats.

But we could go on for hours, and not convey the wonderful *feeling* of this car: the satisfaction we felt just in looking at the flawless chrome, or at the door molding screws, all whose slots line up like a row of Rockettes; or in effortlessly closing a door with one finger.

The Speedster's stock engine is the Porsche 1500, basically unchanged but improved in 30 or 40 unseen ways. The third and fourth gear of the Speedster are lower than in other 1500s for better acceleration, but 100 mph will be no problem. Or, for another \$400 or so, you can get the Super engine, whose performance suits its name.

And, for the perfectionist, a very few genuine 550s (see MT, Feb '54) will soon appear, four overhead cams and all, for somewhere near \$6700.

Photos by Tom Medley



n newsletter

A dual-overhead-cam engine right from the Aston-Martin DB3S powers this big Lagonda, with independent rear wheels



This is the Cresta, a deluxe version of the Vauxhall (GM) six-cylinder Velox. Its lines obviously come from U.S. cars



Austin's '55 four-cylinder A-40 (now with 50 bhp if you like) looks like this. The new model should keep Austin popular

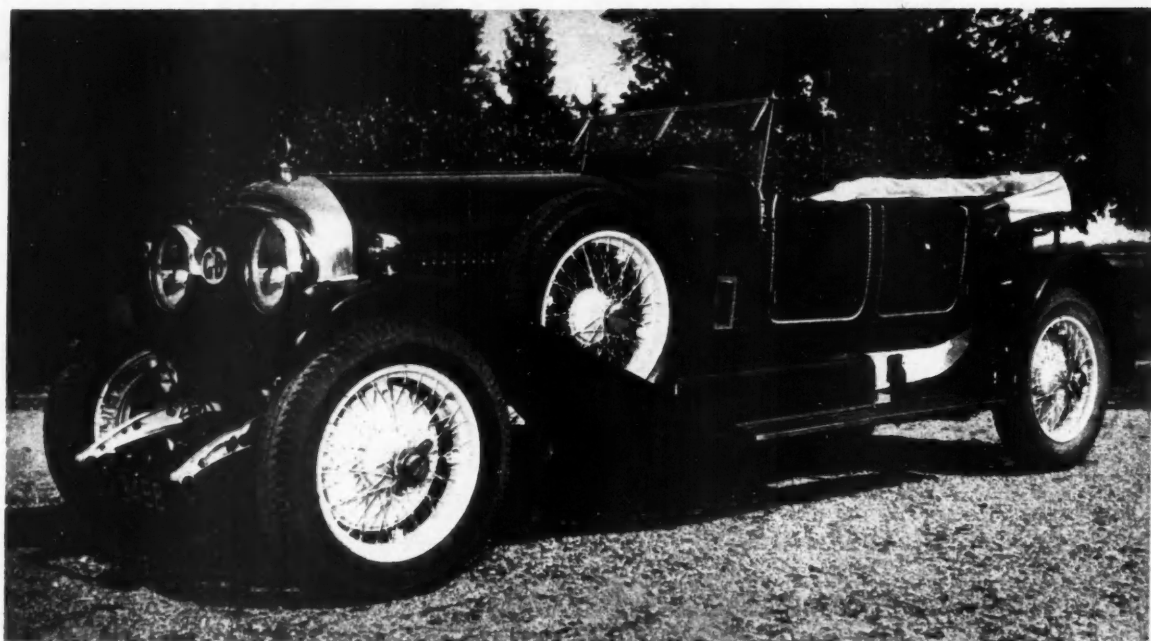
A whole new crop of European cars to whet the appetite of U.S. buyers in every price class: a Porsche roadster, plus a new Lagonda, Austin, and an Allard coupe

By Pete Molson

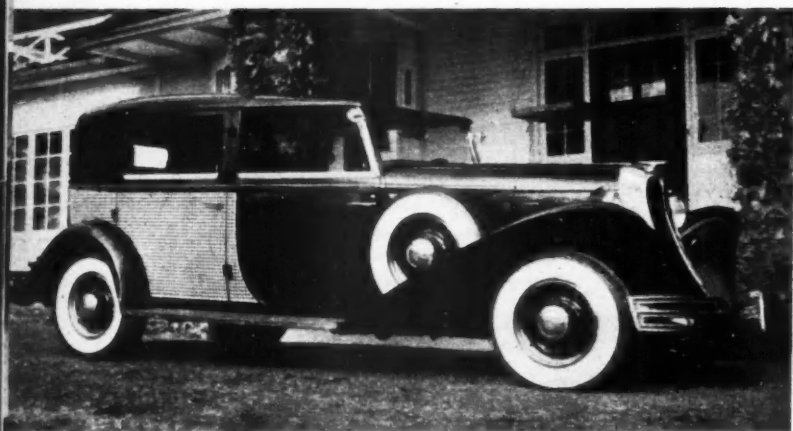


Allard makes a bid for more U.S. sales with this three-seater. It has a Ford Zodiac engine with six cylinders, 71 bhp

Gordon Wilkins



1926 Bentley Tourer



1935 Brewster Town Car

Top: This superlative example of the pre-Rolls Bentley is (if we said "was" we'd get indignant letters from now till summer) an overhead-camshaft job with four valves per each of its six enormous cylinders, each of which in turn displaces 61 cubic inches, or five-sixths as much as the entire engine of a '54 MG! The body is fabric over a wood frame, and power brakes bring the 4400-pound, 145-inch-wheelbase monster to a hasty stop

Robert L. Bastress

Left: In 1935, Brewster, the dignified family coachbuilder of older times, built a few canework town cars on Ford chassis

Courtesy E. M. Harrington

Below: Original tan and green paint and fitted luggage distinguish this Cadillac V-16, once sold to the late Samuel Insull

Courtesy S. J. McDonald



1930 Cadillac V-16 Roadster

Classic Comments

By Robert J. Gottlieb

A LETTER from Ralph Conley advises that the Affiliated Ancient Car Clubs of America is an organization offering a program for owners of antique, vintage, special interest, and classic cars. The address is Post Office Box 243, Millersburg, Ohio.

Tom Probst advises us of the following asking prices for automobiles scattered about the twin cities of Minneapolis and St. Paul, Minn.

1933 Packard 12 convertible coupe, \$800

1934 Packard Eight sedan, \$300

1934 Packard 12 sedan, body by Dietrich (duplicate of the 1933 Chicago World's Fair Packard), \$1000

1935 Packard sedan, \$400

1937 Packard 12 club sedan, \$400

1933 Hupmobile roadster (this one is rare), \$500

1918 Pierce-Arrow, \$250

I would appreciate it if other readers would keep me advised of the asking prices throughout the country, as they are helpful in forming an opinion on the current values of different cars.

G. M. Naul informs us that the Free Library of Philadelphia has an excellent collection of instruction books and catalogues for classic, as well as orphan, automobiles. These books come from the Thomas McKean collection and the library will photostat pages for a reasonable price. The collection is located in the Business, Science and Industry Section of the Free Library. Mr. Naul wonders whether any (enviable) owner of an SJ Duesenberg could be persuaded to submit his car to acceleration and top speed tests in order to substantiate or refute the tests originally made in 1932. Okay gang, any offers?

Arthur L. Sparks writes that, for \$10, his secretary will list detailed specifications, measurements, adjustments and an interchangeable parts list for any car manufactured from 1930 to 1942. Details will include valve timing, ignition timing, and carburetor adjustment. Address requests to Elaine Davis, 314 Caillavet Street, Biloxi, Miss.

And now to the mailbox:

QUESTION—Many years ago I read an article on your Chrysler LeBaron phaeton and I fell in love with the car. After two years of search, I located a Chrysler LeBaron convertible coupe; it is truly a fine car. I have the following problem: The rear end is completely shot; I have searched and advertised, but cannot obtain another unit. The cheapest estimate I have had for machine work is \$380. Do you know where I can purchase a complete Chrysler differential?

Chris Wayne
Norfolk, Va.

ANSWER—Gear-cutting on any classic is an expensive proposition. It is easy to advise owners to look in wrecking yards for parts, but very often, as in your case, parts are not to be had. Your solution, however, is simple, and you should be able to place your car on the road for an expenditure of \$20 or less. Purchase a differential assembly from a wrecking yard for a 1937 Dodge ton-and-a-half truck. It will fit your chassis without any modification whatsoever and you will even be able to use your original wheels. Under these circumstances, this substitution is permissible.

QUESTION—I have a 1939 Lincoln-Zephyr with aluminum heads. Water seeps into the oil and I suspect that the heads are at fault. They seem to be frozen on the block. How do I get them off without destroying them or hurting the block? Can the hydraulic valve lifters be replaced with mechanical lifters? If I decide to change to a pre-1949 Ford or Mercury engine, which one would you recommend? I have no overdrive on this car.

Elon Sandidge
Gulfport, Miss.

ANSWER—Removal of frozen aluminum heads is a serious problem which confronts many, many owners. The quickest answer, and probably the most correct one if they are truly frozen, is: you just don't remove them without damaging them. I have seen thousands of aluminum heads which could not be removed without breaking them into small chunks. Because you suspect that the water in the oil is caused by corrosion of the heads, one or both—if they could be removed without damage—would probably be so badly deteriorated that they could not be restored by milling. In any event, the following method is the most successful that I have tried: Squirt penetrating oil around all the studs after the head nuts are removed. Let the oil penetrate for about 10 days. If you do not have commercial head pullers, you can make a pair for practically nothing. Take two old spark-plugs from a Lincoln engine, break off the porcelain tops, make two handles, and weld the handles to the sparkplug bases. Remove the two plugs from the No. 1 and 6 cylinders, or the 7 and 12 cylinders, as the case may be, and insert the pullers in their place by screwing them into the plug holes. Leave the remaining plugs in the head, but disconnect all wires. Have someone press the starter button while you pull on the heads with the head pullers. The engine compression is of great help in removing the heads, coupled with your prying and pulling.

Commercial mechanical lifter replacements are available as replacements for

hydraulic lifters. If you decide on a V8 engine, by all means use the Mercury. A Ford engine will result in an underpowered car.

QUESTION—Have you any information on the Roosevelt, an eight-cylinder automobile, believed to be a one-of-a-kind car? I purchased it recently for \$350. It is a convertible coupe with rumble seat.

Robert Blades
Minneapolis, Minn.

ANSWER—The Roosevelt was manufactured by the Nordyke Marmon Co. in Indianapolis in 1929. The convertible coupe sold for \$1095. In 1930 the Marmon Motor Car Co. manufactured a car known as the Marmon Roosevelt. Production was discontinued in 1931. Unless your car has a special-built body, it is not one of a kind. Many convertible coupes were built.

QUESTION—Since reboring the engine on my 1934 Packard Super Eight limousine, I have burned out four rods on the No. 6 cylinder. The crankshaft has been turned and is true. New rods have been used, and rod and piston alignment have been carefully checked. I give up.

Royale Smith
South Bend, Ind.

ANSWER—Don't give up so quickly. Clean out the dirt from the oil passages, thus assuring an adequate supply of oil to the connecting rod bearing. You may be surprised to find foreign matter in them, as a result of your rebore. Mike the crankshaft again. Finally, it is possible that the cylinder itself is misaligned since the rebore. Check this carefully.

QUESTION—My 1931 Franklin is very hard to shift. Can you give me any leads as to what to look for, prior to taking the transmission apart?

Bryan Welch
Little Rock, Ark.

ANSWER—Don't disassemble the transmission without first flushing it out, refilling with oil, and trying the car. Many times the shift forks attached to the shift stick get dry, notwithstanding the grease normally carried in the gearbox. They should be well lubricated and the transmission refilled with grease before you go to the trouble of disassembly. If this does not cure the trouble, I imagine you will find some bad bearings, shafts off center and/or some scored shafts.

QUESTION—Has a 1923 Willys-Overland pickup truck any value as a collector's item?

James Zeller
New Albany, Ind.

ANSWER—It has no value from a classic standpoint. Some truck collector (if there are any such bobbyists) might, I said might, be interested.

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—for wire wheels
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—for wire wheels
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—for wire wheels
- 1954 DE SOTO —for disc wheels
—for wire wheels
- 1953 DODGE (short wheel base)
—for disc wheels
—for wire wheels
- 1953 DODGE (long wheel base)
—for disc wheels
—for wire wheels
- 1954 DODGE (short wheel base)
—for disc wheels
—for wire wheels
- 1954 DODGE (long wheel base)
—for disc wheels
—for wire wheels
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- 1954 PLYMOUTH—for disc wheels
—for wire wheels
- 1953 PONTIAC —all models
- 1953-54 STUDEBAKER —all models

Prices of other makes and models on request. Write or wire today.

*Price covers complete kit for use with car's 5th wheel. Extra wheel not included.

HUDELSON SALES CO.

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'55 MG Road Test

(Continued from page 33) A little more thirsty at 30 mph than last year's TF, the '55 model upped its economy at 45 and 60 mph; peak mileage at 30 mph remained high enough—34.2 mpg average—to keep it near the top of the list.

The same held true of the roadster's top speed. Not an important factor to the MG owner who drives his roadster as a second car (or the only car) around town, top speed is only slightly higher than it was last year. MT's test car had not been tuned following the 1600 miles put on it by the Los Angeles distributor, and the car was capable of only 85 mph when run over the same stretch as that used for checking the Magnette. In top-speed trim (windshield down), the car should do very close to 90 mph, and we feel that in stock form and well tuned, the '55 MG-TF should consistently hit 86-87 mph.



THE STORY IN FIGURES

'55 MG-TF

REAR WHEEL HORSEPOWER

(Determined on Clayton chassis dynamometer. All tests are made under full load, which is similar to climbing a hill at full throttle. Observed hp figures not corrected to standard atmospheric conditions.)

11 road hp @ 1200 rpm and 19 mph	
21.5 road hp @ 2000 rpm and 31.5 mph	
28.5 road hp @ 2500 rpm and 39.5 mph	
Max. 42.5 road hp @ 4300 rpm and 67.5 mph	

ACCELERATION

(In seconds; checked with fifth wheel and electric speedometer.)

Standing start 1/4-mile (65.5 mph)	20.8
0-30 mph	5.5
0-60 mph	17.3
10-30 mph	5.1
30-50 mph	6.8
50-75 mph	24.0

SPEEDOMETER ERROR

(Checked with electric speedometer.)

Car speedometer read 37 @ true 30 mph	
50 @ true 45 mph	
64 @ true 60 mph	

FUEL CONSUMPTION

(In miles per gallon; checked with fuel flowmeter, fifth wheel, and electric speedometer. Mobilgas Special used.)

Steady 30 mph	34.2
Steady 45 mph	32.6
Steady 60 mph	26.2
Simulated traffic over measured course	22.7
Tank average for 2216 miles	25.1

ENGINE: Ohv, four cylinder. Bore 2³/₁₆ in. Stroke 3¹/₂ in. Stroke/bore ratio 1.24:1. Compression ratio 8.0:1. Displacement 89.46 cu. in. Advertised bhp 65 @ 5200 rpm*. Bhp per cu. in. 0.73. Piston travel @ max. bhp 3033 ft. per min. Max. bmep 129.97 psi. Max. torque 78.3 lbs.-ft. @ 3000 rpm.

DRIVE SYSTEM: STANDARD transmission is four-speed synchromesh. RATIOS: 1st 3.5, 2nd 2.06, 3rd 1.38, 4th 1.00, reverse 3.5.

REAR AXLE RATIO: 4.875.

DIMENSIONS: Wheelbase 94 in. Tread 50 in. front and rear. Wheelbase/tread ratio 1.88:1. Overall width 59¹/₂ in. Overall length 147 in. Overall height (empty) 52¹/₂ in. Turning diameter 31 ft. 3 in. Turns lock to lock 2³/₄. Test car weight 2080 lbs. Test car weight/bhp ratio 32.0:1. Weight distribution 48.5% front, 51.5% rear. Tire size 5:50 x 15.

PRICES: (Including suggested retail price at port of entry, federal tax, delivery and handling charges, but not freight.)

ROADSTER \$1995 with disc wheels, \$2130 with wire wheels.

As pointed out earlier, the new MG is, except for the engine, the same as the '54; but with this year's car it wasn't necessary to fight the wheel in fast, tight turns, nor was it necessary to brace yourself and put a death-grip on the wheel at high speeds. Brakes were the same as last year's excellent ones. The only mark on the other side of the ledger (and this is so un-MG-like that we presume it is peculiar only to the test car) is that the '55 model had a reluctant synchronizing mechanism that clashed the gears.

The appeal of the MG-TF is clearly evident by now. It'll appeal to anyone who has an urge to rid himself of his big car and own a low-cost sports car.

Probably a natural for a Briton's short-haul driving conditions, the Magnette is not wholly suited to our cross-country driving or expressway conditions; yet the Magnette shows promise of bringing the sports car to the family-car level.

—Jim Lodge



'55 Magnette

REAR WHEEL HORSEPOWER

(Determined on Clayton chassis dynamometer. All tests are made under full load, which is similar to climbing a hill at full throttle. Observed hp figures not corrected to standard atmospheric conditions.)

13 road hp @ 1200 rpm and 19 mph	
23.5 road hp @ 2000 rpm and 32 mph	
28 road hp @ 2500 rpm and 39.5 mph	
Max. 42.5 road hp @ 4300 rpm and 67 mph	

ACCELERATION

(In seconds; checked with fifth wheel and electric speedometer.)

Standing start 1/4-mile (60.6 mph)	22.6
0-30 mph	6.3
0-60 mph	22.5
10-30 mph	5.6
30-50 mph	9.5
50-75 mph	29.1

SPEEDOMETER ERROR

(Checked with electric speedometer.)

Car speedometer read 34 @ true 30 mph	
49 @ true 45 mph	
64 @ true 60 mph	

FUEL CONSUMPTION

(In miles per gallon; checked with fuel flowmeter, fifth wheel, and electric speedometer. Mobilgas Special used.)

Steady 30 mph	30.2
Steady 45 mph	26.1
Steady 60 mph	23.3
Simulated traffic over measured course	20.9
Tank average for 2216 miles	22.1

ENGINE: Ohv, four cylinder. Bore 2¹/₂ in. Stroke 3¹/₂ in. Stroke/bore ratio 1.21:1. Compression ratio 7.2:1. Displacement 90.84 cu. in. Advertised bhp 60 @ 4600 rpm. Bhp per cu. in. 0.66. Piston travel @ max. bhp 2683 ft. per min. Max. bmep 129.97 psi. Max. torque 78.3 lbs.-ft. @ 3000 rpm.

DRIVE SYSTEM: STANDARD transmission is four-speed synchromesh. RATIOS: 1st 3.64, 2nd 2.21, 3rd 1.37, 4th 1.00, reverse 4.75.

REAR AXLE RATIO: 4.875.

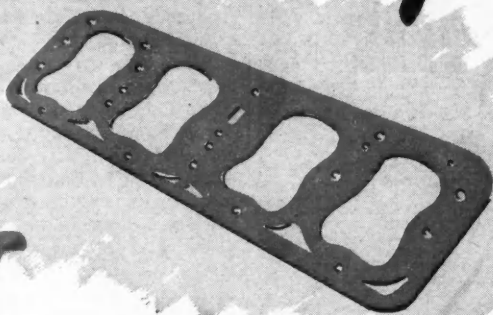
DIMENSIONS: Wheelbase 102 in. Tread 51 in. front and rear. Wheelbase/tread ratio 2.0:1. Overall width 63 in. Overall length 168 in. Overall height (empty) 58 in. Turning diameter 36 ft. 10 in. Turns lock to lock 2³/₄. Test car weight 2490 lbs. Test car weight/bhp ratio 41.5:1. Weight distribution 55.4% front, 44.6% rear. Tire size 5:50 x 15.

PRICES: (Including suggested retail price at port of entry, federal tax, delivery and handling charges, but not freight.) SEDAN \$2595.

ACCESSORIES: Radio \$70, heater \$64, fog lights \$29, direction signals \$29, windshield washers \$11.

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December 1954

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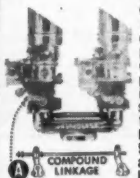
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ALMQUIST ENGINEERING
Milford 6-T. Pa.

The Days of the Six Are Numbered

(Continued from page 28) a six. There is no direct comparison. A little one like the Studebaker Champion (185-cubic-inch displacement) has no modern American V8 counterpart anywhere near that small. It's economical within the performance range of the Champion, but so would a V8 of similar size.

When you start pressing a small six on the open highway, or away from the traffic light, it is no longer economical (at least when hooked to a full-sized car) and neither is it very durable because it works too hard. Here is where the modern, medium-sized V8 as now found in all price fields comes into its own. It has a performance margin which enables it to loaf under normal driving demands, and

when you're loafing, you don't burn up much energy (or gasoline). If you doubt this, check our road test figures on a car as big as the '54 Cadillac.

We have heard (off the record) that some of the 1955 V8s are downright stingy, and that this fact will be exceedingly embarrassing to these same companies who continue to manufacture optional sixes. It all boils down to the fact that the six is getting to be a poor buy in a full-sized car unless there is a mighty big price differential between it and its V8 companion. There are exceptions, of course. But for all practical purposes, we can repeat our prediction that if you want a six in 1960, you'll have to buy it secondhand.

—Don MacDonald

MT RESEARCH Technical Service

By Fred Bodley

Please send a stamped, self-addressed envelope if you want to receive a personal answer. There is no charge for this service. However, due to the bulk of letters received, it is impossible to give a quick reply. Only selected questions will be printed.

QUESTION—I would like to know if anyone makes anything which will lower the number of turns lock to lock on my Studebaker Commander, 1952 model. Robert L. Clark, Mechanicsburg, Pa.

ANSWER—A longer pitman arm is the easiest means of reducing the number of turns lock to lock. I do not know of such an arm for your car. It is possible that a longer arm from some other car could be found that would fit your steering gear. The arm can be cut and spliced but this procedure is not recommended, as the pitman arm is a very critical part of the steering.

QUESTION—I have a 1953 Olds Super 88 running on butane. I have installed a twin exhaust system and am thinking of installing a Mallory Magspark. I would like to know if this will increase my top speed, or will the valves float? Lee J. Miller, Lake Charles, La.

ANSWER—The Mallory Magspark is a splendid ignition system, but the rpm of your engine is limited by valve float.

QUESTION—I had a "top oiler" installed on my car to cure a sticking valve condition. As there seems to be a great difference of opinion as to how much good these accessories do, I should like your opinion. George Maxwell Jr., McComb, Miss.

ANSWER—My personal opinion of so-called "top oilers" is rather low. If an intake valve

was the culprit it is reasonable to assume that the top oil entering with the fuel mixture will lubricate the valve stem, but in my opinion, once combustion has taken place, all lubricant contained in the mixture is consumed.

QUESTION—What is the meaning of torque? What is the function of a torque converter? R. L. Weston, Mexico City, Mexico.

ANSWER—Torque is the moment of a system of forces that causes rotation. Applied to an automobile engine, torque is the turning force exerted by the crankshaft. It is a measure of the ability of an engine to do work. The function of the torque converter is to turn this force into multiplied energy. At low car speeds and high engine speeds, torque is multiplied by the converter, similar to the function of the gears in a conventional transmission. As car speed increases, torque multiplication gradually decreases, simulating high gear of the conventional transmission.

QUESTION—How do you install an overdrive in a 1954 Chevrolet Two-Ten with conventional transmission? Arthur Hoffman, Garrison, Kans.

ANSWER—This department receives many requests on this subject and we are glad to pass on to our readers this information from a man who has done the job successfully.

Parts used are these: transmission with overdrive, Studebaker Commander; rear axle assembly, '51 Kaiser; driveshaft, Plymouth, using Detroit-type U-joints.

Changes to the transmission included shortening of the main drive to 6 7/8 inches; drilling two new lower bolt holes to match those in the Chevrolet clutch housing; and reaming the Chevrolet pilot bushing to take the Studebaker transmission shaft.

The Chevrolet clutch plate fits the Studebaker transmission shaft. The Studebaker clutch release bearing support was machined down to take the Chevrolet clutch throwout bearing.

To quote its owner, "The car has much better acceleration, rides better, and performs like a thoroughbred." Anyone desiring detailed information on this conversion, please write to Arthur Hoffman, Garrison, Kan.

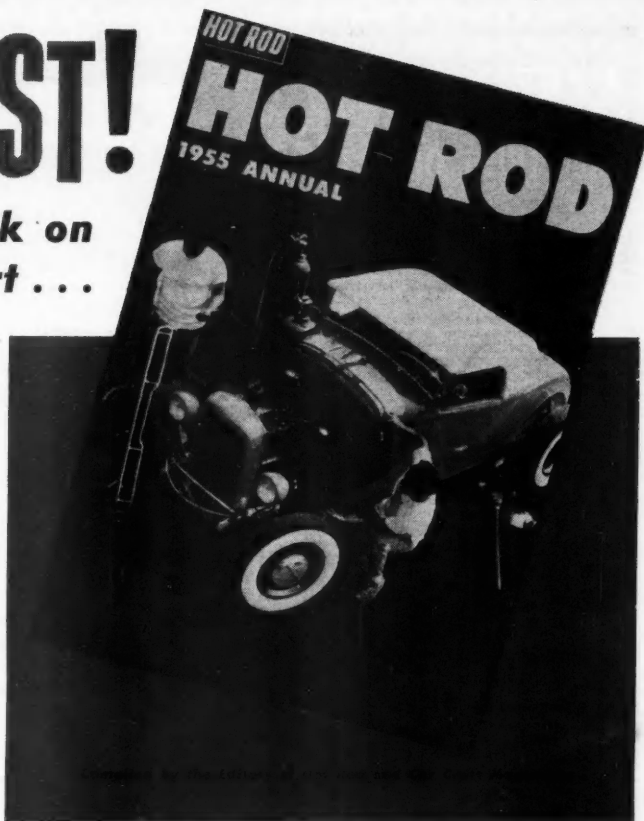
Motor Trend

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Motor

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By Pete Molson

WE HAVE BEEN ACCUSED of neglecting names of winners and details of cars in favor of picturesque stories of hazards encountered, whether a certain race was fun, etc. We cheerfully admit our guilt: Motor Mélange was never intended as a list of contestants, but was planned to bring a comparatively new field of sport to the attention of MT's readers, who are by and large owners of that very satisfactory and much maligned product known as Detroit iron. In these days of overwork and hurried weekends, a race isn't much fun for a family if it means that wives and children (and, yes, Papa too) have to sit for hours where it is (a) too hot, (b) too cold, (c) too hard, or (d) just plain dull. Therefore, until further notice, we shall continue to plump for events planned—and carried out—for the satisfaction and pleasure of all concerned.

JUST SUCH A ONE was the Anglo-American Vintage Car Rally, in which 10 British and 10 U.S. cars set out from Edinburgh to the shrieks and moans of bagpipes, to end up after 748 circuitous, scenery-filled miles at the famous Goodwood race course near London, where various trials and a gymkhana were on the calendar. In spite of other such fascinating attractions as a 1906 Ford Six-Forty Speedster, a 1918 Biddle Speedway Special, and a 717-cubic-inch-displacement 1916 Pierce-Arrow, the favorite of our team was a 1906 Stanley Steamer "Gentleman's Speedy Roadster," the only steamer in the

run. Loud were the groans from spectators of both nations when, only 14 miles from the finish and after unending troubles, it retired with a hole in its head. The British team, mounted on such venerable steeds as a 1908 Wolseley-Siddeley, a 1913 Sunbeam, and a 1914 Prince Henry Vauxhall, were the winners of a giant cup given by the Royal Automobile Club. Everyone had such a good time that the rally will be held again in '55, but on our side of the Atlantic. If we put on a show half as good as this year's, you shouldn't miss it.

WHAT'S COMING UP?

NOVEMBER

24-28, Great American Mountain Rallye, New York to Poughkeepsie, N.Y.

27-28, Torrey Pines Road Race, San Diego, Calif. (Six-hour Le Mans-type race starts Saturday afternoon)

DECEMBER

6-12, Nassau Trophy Road Race, Nassau, Bahamas

JANUARY

15-26, Brussels Show, Brussels, Belgium

FEBRUARY

20-27, Sixth Annual NASCAR Speed Week, Daytona Beach, Fla.

Motor Mélange makes every effort to quote correct dates and other information for the national events listed here. We suggest that you check with your local auto club or newspaper before making final plans, since dates and courses may change after MOTOR TREND has gone to press.



One of the closing events of the Anglo-American Vintage Car Rally was a 40-minute stamina test. A 1916 Pierce-Arrow was the easy winner, averaging nearly 60 mph

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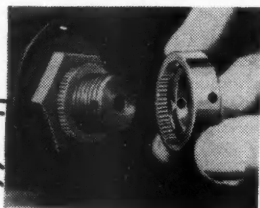


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Driving around with Walt Woron



Heel-over gives evidence of good ride, ability to stick in turns without drifting over line. Speed here was 55 mph

THE ACCUSATION that American car manufacturers couldn't build a sports car—even if they tried—is no longer valid. The first indication was the Chevrolet Corvette. And although the Ford Motor Co. is the first one to deny it, they have a *sports car* in the Thunderbird, and it's a good one.

Ford prefers to call it a "personal car." The thinking behind this, as brought out in a discussion with W. R. Burnett, Chief Passenger Car Engineer for Ford, is that "although the Thunderbird has the performance and attributes of most sports cars, management also felt that it should have a few more comforts to make it more appealing to a wider segment of the public." Besides having the power-operated four-way seat (which is actually for making the car usable for more people of varying builds and heights, rather than just comfort), the Thunderbird has power steering (optional) for more ease in city driving, power brakes, and complete weather protection in the form of a standard Fiberglas hardtop (that can be placed over the optional soft top when it's folded up behind the seat), and roll-up windows (power optional). This follows our thinking about the new type of sports car. You'll recall that we pointed out at the time of Thunderbird introduction (June MT), "The pattern [of sports car acceptance in this country] became evident. America was definitely interested in a *personal car* that was *fun to drive* and *feasible to own*."

Enough for that. The car's been kicking around long enough for almost everyone to know most of the stories about it (except some of the finer points we're going to bring out here). So let's get on to the hottest news about the car. What'll she do? To find out, Don MacDonald and I visited the Ford Proving Ground (Dearborn, Mich.) on one spottily sunny day in be-

tween two rainy ones. Having the car for the better part of the afternoon enabled us to become familiar with it quickly.

Vision over the low hood is good, although there is a slight amount of distortion in the corners of the wrap-around windshield. With top up you feel pretty closed in, mostly because it's not like most of the new car "glass bowls."

All instruments (including a tach) are well-positioned and easy to read. Of interest to rally drivers is the sweep-second clock. The emergency brake is up under the dash, like passenger cars, instead of being "fly-off" à la sports cars. The foot pedals are far enough apart so that you don't get your feet tangled. You don't even have to reach across the wide bench-type seat to raise or lower the passenger's window, if you pay the extra loot for power-operation of it.

After getting it out on the grounds and getting acclimated to the car (with a Ford engineer beside me), I began to put it through its paces. The more I drove it, the more I liked it. The happiest thing to me was not that it could burn rubber from a standstill (which it will), nor that it can burn rubber when changing gears (even with a Fordomatic), nor that it feels so solid to driver and passenger alike, but—that it handles so superbly.

There's definite oversteer built into the car (which means that it will break loose in a turn before it drifts, unlike the true competition sports car). It hangs so well in the corners that you can take any given curve at 10-15 mph more than the '55 Ford (an improved version of the top handling car of '54). Most important is the feeling of security you get from the car. After pushing it around the handling course (asphalt, varying-radius turns) a few times I soon got confident enough to begin taking them at 55-65 mph. With more practice behind the wheel I felt sure that

I could up the speed—that's how the car impresses you.

With all of these good handling characteristics, the Thunderbird is also easy to drive, having an exceptionally short turning radius, a steering ratio of 20 to 1 (3.5 turns lock to lock, both with and without power steering). You can adjust the wheel to your own liking merely by loosening the adjustment on the column and pushing in or pulling out the wheel (three inches of movement).

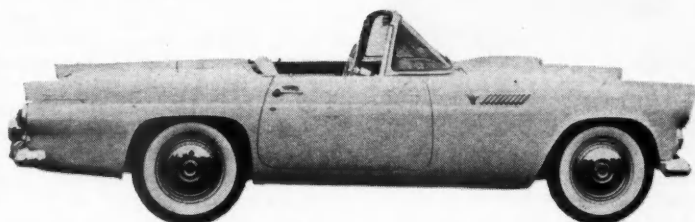
The ride is unlike that which the die-hard sports car addict has come to expect from a sports car. It's firm enough to prevent too much bobbing coming out of a dip or flying over a bump, yet it's soft enough to be kind to a weak sacroiliac. There's a certain initial lean going through a corner, but it doesn't increase appreciably during severe cornering.

The standard power brakes make the Thunderbird squat down right now. Last year Ford brakes were among the best in their class, while the combination of larger brakes (11-inch drums instead of 10-inch) and the lighter weight make the Thunderbird brakes well above average.

Drag? Why not? The Thunderbird will go with the best of them, even with Fordomatic. Normally, a fast speed-shifter could outdrag an automatic car, but here's one case where they're even. After driving the Fordomatic job I had a chance to drive a couple with stick shifts. From first to second the gate wasn't exceptionally smooth, and though you can keep your foot down on the throttle all the way, it's asking a lot of the clutch, day-in and day-out. In shifting from second to third, you can keep your foot down and just "pop" the clutch. Going through this procedure, you'll wind up just about even with a Fordomatic 'Bird. Why? With Fordomatic, a hotter engine, rated at 198 horsepower, is used. The stick-shift engine has 190 hp.

FORD THUNDERBIRD

No car has caused so much conjecture as Ford's new Thunderbird. We looked for a lot, and when we drove it, we found it.



The Thunderbird's looks change considerably with its fender skirts removed

A time of 11 seconds is what we got for 0 to 60 mph, putting it into sports car company. The needle of the electric speedometer hit 80 mph just 19.4 seconds after the standing start. Axle "wind-up" is kept to a minimum by the use of rubber bumpers on the frame which the semi-elliptic rear springs contact on sudden take-offs before the springs distort too far.

Fordomatic for '55 now uses the low-gear starting feature (available on all '55 Ford products), which permits you to start in low gear instead of second by pushing the throttle all the way to the floor. It will then shift to second at about 30 mph, and to third gear around 60 mph. This is all accomplished while the selector is in DRIVE; it isn't necessary to use LOW, then to manually shift to DRIVE.



MT's Editor removes 'Bird's chrome air cleaner, exposing four-barrel carburetor; valve covers bear special insignia

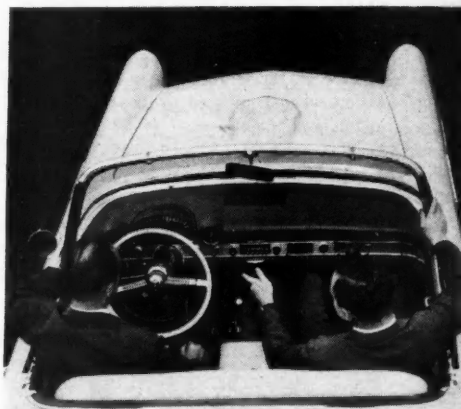
Downshifts can be made to LOW at any speed. This puts you manually into second gear, then an automatic downshift to LOW comes at around 20 mph. Downshifts are considerably smoother.

The Fordomatic transmission lever, located above the driveshaft tunnel, is short and stubby (like that of most sports cars), giving you the feel of a conventional transmission. An interesting safety feature incorporated in the lever knob is a pushbutton lock on top of it to prevent inadvertent shifts from DRIVE to REVERSE or vice versa. You can go from LOW to DRIVE, but not through NEUTRAL into REVERSE unless you push the button.

Acceleration at passing speeds is impressive. We averaged times of 4.2 seconds to get from 30 to 50 mph, and 11 seconds from 50 to 80 mph. That's enough to indicate that the 'Bird meets its advertising claims of "sports car . . . performance."

Despite claims to the contrary, no one outside of Ford personnel had tested the car for top-speed at presstime—and Ford people aren't talking. My guess, though (and I have reason to believe it's fairly accurate) is that it will fly along in the range of 120-mph-plus (if overdrive-equipped). That's as fast as most popular sports cars, or faster.

As I see it, the Ford Thunderbird has three basic points in its favor: a rakish, ground-hugging style; performance to match good sports cars; and a design that has built-in comfort for driver and passenger, with no penalty whatsoever to pay for their fun. It certainly seems like the right combination to make the car appealing to a fairly broad cross-section of the motoring public.



Scanning Thunderbird's instrument layout, driver finds neat, legible setup with tach and clock straddling speedometer



It takes two to do a quick, neat job of folding the Thunderbird's top down behind seat. Fiberglass hardtop is standard

FORD



You sit differently in the '55 Ford, with its new body related to the Thunderbird

BECAUSE FORDS through the years have become almost synonymous with quick getaway, and because many people who drive Fords are interested in stoplight acceleration, I had this in mind when I drove the newest Ford product—a Customline V8 with overdrive—at the Ford Proving Grounds (Dearborn, Mich.). Having heard rumors as to the horsepower increases for '55, I viewed our acceleration tests with considerable interest. A comparison to last year's test Fords, and to a few other models, is quite interesting.

Averaging out the runs we got on an overdrive-equipped Ford (according to the engineer with me, "not yet thoroughly broken in"), from a standing start, speed-shifting to second and third gears, we wound up with times of 4.5 seconds for 0 to 30 mph (actual, not speedometer), and 14.1 for 0 to 60. At the lower end, this means that the '55 car is 1.1 seconds faster than the '54 Fordomatic Ford V8 and 1.2 seconds faster than the '54 overdrive Six. The '55 overdrive Ford V8 gets to 60 mph 2.1 seconds sooner than the '54 Fordomatic V8, and 2.3 seconds faster than the overdrive Six. These figures put it into the '54 low-medium price bracket as far as acceleration goes—it's second fastest when compared to those eight cars.

Just as important, if not more so, are the cruising speed acceleration figures. These are the figures that MOTOR TREND has emphasized over the past few years because we feel it's more vital from a safety standpoint than stoplight "go." You can see, then, why we're happy to see the industry-wide focus on this factor.

To get around a truck or other slow-moving vehicle (in the speed range of 30 to 50 mph), you'll do it in 5.3 seconds, which is 2.2 seconds faster in the '55 overdrive Ford than our test '54 Fordomatic, 6.8 seconds quicker than the overdrive Six, and even 1.4 seconds better than the test '54 Mercury (with Mercomatic). To go from 50 to 80 mph took only 16 seconds in the overdrive '55 Ford V8. This average time was made using third gear; the same would apply if you were cruising along in overdrive, stomped the throttle and forced the transmission into direct drive. This is a fantastic increase over last year's test cars; 12.7 seconds better than the '54 Fordomatic, 5.9 seconds better than the overdrive Six, and even 3.5 seconds faster than the '54 test Mercury. Only five cars tested last year (out of 24) bettered the '55 Ford's time—and they were all big, top performance cars.

The test car took to the speed-shifting with no squawks. Fords are known for their good clutches, but this year, to compensate for the added horsepower from the 272-cubic-inch package, Ford engineers beefed up the clutch, the transmission, and the rear axle. There was no indication of clutch slippage at any time during the hard shifting. Axle wind-up is also eased here by rubber bumpers attached to the frame, which are contacted by the front half of the rear spring under hard accelerations. (I didn't drive a '55 Ford with Fordomatic, but for an impression of this improved automatic, refer back to the Thunderbird write-up. Fordomatic is the same on both cars.)

So much for the new Ford's go-ability. What about its stop-ability? In our first driving impressions of the new cars we generally do not check brakes, except for feel; however, when we do make our stopping distance tests we expect some improvement. This is based on the larger drums (11-inch now, 10-inch last year). Also the fact that when it became necessary to shut down from 80 mph to 50 because we were rapidly approaching the curved loop at the end of the Proving Ground's acceleration strip, the Ford slowed down rapidly with no complaints. Brake fade characteristics should also be improved because of the larger drums.

"I drove the wrong car first," I replied in answer to an engineer's question about how I liked the roadability of the '55 Ford. "I shouldn't have driven the Thunderbird first. But, in mentally comparing the new regular Ford to the '54 models, I'd say that it's about as good as the Six, which I liked better than the V8 last year because it seemed you could take it into corners just a bit faster." As for how much we think of the Ford's handling in general you'll recall we named it the best-handling and most roadable car of all those we tested in '54 (Nov. '54 MT).

The Ford is a good compromise between understeer and oversteer. As a result it sticks in corners exceptionally well, yet when it begins to lose traction, it gives you ample warning. With a good tug at the wheel and another nudge of the throttle, you're easily out of trouble. It feels equally well on dirt or asphalt.

Some changes have been made in ride characteristics of the new Fords, such as revalved shock absorbers and tubeless tires. It's difficult to tell if there's any change in the ride, but as far as tire squeal is concerned, there's a lack of it at lower speeds. At higher speeds the tubeless tires still complain when the car's taken rapidly or sharply around corners.

PONTIAC



There've been some changes made: Pontiac look is cleaner, the Indian has left

AFTER DRIVING the '55 Pontiac, Don MacDonald said to me, "This is like no Pontiac I've ever driven." "You're so right," was my reply. "Only the name has not been changed." That just about sums up my impression of the new Pontiac. From front to rear bumper it's entirely new . . . and it feels it.

The Pontiac Star Chief Catalina that Don and I drove was brand new off the assembly line in Pontiac, Mich. In fact, I drove it on its initial hop, through the factory and out the back door onto the half-mile concrete track.

This is where all new Pontiacs are driven as a check-out prior to shipment. It isn't a full-blown test track, but it was

enough to give me a good idea of the car's potential.

With only 11 miles on the speedometer I wasn't able to run any acceleration checks. You can bet that with 180 horsepower it'll scoot much better than last year's Pontiac (with only 127). In the few take-offs I tried, it didn't scorch any rubber on the pavement, but had more of a tendency to surge away. One thing I've found from experience, though—it's difficult to tell how well a car is accelerating, strictly by the seat of the pants. Plus—the more rubber you burn, the more horsepower you're losing in wasted effort.

At first glance I didn't think the integral grille-bumper arrangement would

be much protection to the Pontiac in case it ran into another car. So I tried it—gently. What happens is that the top outside sections will ride over the bumper of the car in front, causing its rear bumper to meet the bottom bumper of the Pontiac. If either gets damaged, it won't be the Pontiac.

Vision in all directions is pretty terrific. Naturally, the wrap-around windshield helps, but in guiding you through traffic the flat hood and easily visible front fenders are a big help, too. Parking is an ease, what with being able to see the rear fenders without even rising up in the seat.

The red line speedometer is fascinating to watch. The first few days or weeks with this are going to be the hardest for new Pontiac owners. There may be dinged

fenders and scratched bumpers until they get over watching the red line curve its way around the dial like a thermometer.

Instrument legibility, on the whole, is not quite on a par with last year's car. The speedometer is fairly low, and the two circular dials are on both sides, even lower. You have to search around to read various instruments, at least until you get used to their location. The odometer, as usual, is under a magnifying glass.

Pontiac has always had a solid feel; it has it still. The ride is somewhat firmer than before, even considering that the new springs are somewhat stiffer. Over dips and bumps there was no appreciable pitching. Even when coming to a quick stop, there seems to be less nosediving.

Body shake over rough railroad ties

isn't even noticeable. There was no steering wheel shock, and only a slight vibration in the column and wheel.

Taking the slightly banked corners at speeds up to 45 mph gave me the impression that the Pontiac will corner better than in previous years. It didn't want to break loose, and being on a slight bank, it didn't drift. The rear springs mounted outboard of the frame are responsible for the better cornering and less body heeling.

Some rumors we've heard about fuel economy checks at the General Motors Proving Ground would seem to indicate that this new V8 is going to make a miserly fuel user out of the Pontiac. To trace down these rumors we'll run our economy checks as soon as possible; we're just as curious as you are.

THE CHRYSLER LINE



This going machine is, of all things, a Plymouth, new from the ground up, lower, longer, with a rugged new V8 engine

SELDOM IN AUTOMOTIVE HISTORY (recent, anyway) has there been so much conjecture about new models as there has been about the new Chrysler line. Although most of this has been about styling, there has still been considerable wonderment about what Chrysler would do with its "baby," the Plymouth. It has been an open secret for months that it would be powered by a V8 engine—that was dictated by the competition. But, would a car that seldom competed on a performance basis get the push it needed to stay with the other two in the low-priced Big Three, even with a V8? I can't tell you from the comparatively little driving I've done of the Plymouth V8, but I can tell you that the *potential* is certainly there.

Not too long ago I had the opportunity to drive six of the new Chrysler products, all in one day, and over the same roads—the streets and roads traversing Cranbrook, a famed private seat of learning in Bloomfield Hills, Mich. Chrysler Corporation officials chose the grounds of this school as the best hideaway from public eyes (since this was well before public announcement of their products). The conditions under which I drove the cars

were adverse: speeds had to be kept down because of road conditions, other representatives of the press were driving other cars, and the cars were just off the assembly line (with not one registering more than 43 miles when I drove it). Therefore, I can't tell you too much about the cars' actual performance, but I can tell you how they *felt*. I'll first brief you on the features common to all of the Chrysler line, then discuss individually those that are peculiar to one make.

The new wrap-around windshields on all models don't look as much like a wrap-around as the reverse post type (since we've almost come to accept the latter type as the true wrap-around), yet they provide vision equal to, and in some cases more than, other wrap-arounds. The posts have been moved back to provide a vision angle of 109 degrees for the driver. And in wet weather, Chrysler wipers sweep more of the blind spot than others. Because of their distance from the windshield, opening of the quarter windows no longer aids in defrosting the windshield, but defroster outlets are now provided all the way across the windshield.

The shorter the hood, the better the forward vision. For this reason Plymouth ranks first in overall vision, with Dodge a close second. All cars are better than previous models.

The suspended brake pedal on all clutchless Chrysler cars is the widest in the industry. Its eight-inch width almost makes it mandatory for you to become a left-foot-brake driver. It's wide enough for you to use either foot on it with ease, with no thought given to which foot you use. On those cars equipped with power brakes I found that the sensitivity was reduced considerably. Now when you hit the pedal it feels almost like a top-notch-adjusted mechanical system; no longer will you inadvertently pitch your passenger into the windshield. If the power boost

should fail, there's six inches of pedal travel, plenty for non-power braking.

Power steering has been unchanged for '55 (except that the coaxial-full-time system is now provided on Dodge and Plymouth cars). The steering wheel returns to neutral more readily than before when you're on asphalt. Even on dirt I found it had more of a tendency to find its neutral position when I let go of the wheel.

The unusual location for the PowerFlite transmission selector reminded me vaguely of the L-29 Cords, which also had their shifting lever on the dash. ("There's nothing new under the sun?") The reason for this "new" location, Chrysler people say, is that "the DRIVE range satisfies all normal requirements once the car is underway . . . thus it is a natural step to locate it alongside other controls that normally are used only when starting or stopping the car." With PowerFlite this is probably true; there is little need to use LOW gear except for braking down more rapidly than is usually necessary, or for added punch in passing a slow-moving vehicle. In most cases the shifting lever is no harder to reach than most levers mounted on the steering column. The one exception to this was the Dodge, whose markings were also hidden by the crossbar when the steering wheel is in a neutral position. (Once you get used to it, you need no longer look at the panel to see what gear you're in.) Chrysler also states that the new position *gives* the steering column " . . . a cleaner, more functional appearance . . ." and " . . . permits a more direct connection with the transmission, with the linkage carried well above the road for better protection against dirt and ice." I wonder, though, if there isn't another reason for putting the lever on the dash, and that is—to be *different*? Upshifts (automatic or when using LOW and manually shifting to HIGH) are noticeably smoother.

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Driving around with Walt Woron

continued

For years Chrysler has withstood the brunt of accusations that they weren't "modern" by retaining the cowl ventilation system. But other cars that did scoop up hot, carbon-monoxide-laden air from close to the pavement through air duct openings in the fenders now use openings in the cowl. More power to Chrysler for having stuck to their system, which provides fresher and cooler air. The cowl vent control has been relocated immediately below the instrument panel on all Chrysler cars to provide easier opening and closing as necessary.

The top three cars in the Chrysler line have padded dashboards, while the Dodge and Plymouth have the dull finish, painted panel. Though not as effective in reducing glare as leather, the dull finish is immeasurably better than a high gloss. The new concept of arranging the instruments in a "... functional manner patterned after the idea cars as well as sports cars" is in itself commendable from an esthetic standpoint. However, as a group they become harder to read without searching the panel. Individually, they are easy to read because of the decided contrast between numbers (and letters) and background, plus the use of red indicator needles.

CHRYSLER NEW YORKER DELUXE—Of the Chrysler line, this one is definitely the power package. As of the time I drove the car, I didn't know what the horsepower was (250), but it wasn't necessary to know from the standpoint of how it felt. It virtually leaped from a standstill, leaving little to be desired. In combination with PowerFlite transmission, it has a smooth getaway.

Its wider front tread certainly adds to its stability, while it also gives you a feeling of controllability confidence, even when accelerating on slick dirt. Through turns it stays flatter (less body lean) than the '54 version. A good feature of the steering wheel is the use of thumb impressions opposite the crossbar, right where your thumbs normally fall.

CHRYSLER WINDSOR—In keeping with providing a luxury car that has sufficient but not outstanding power, and since it replaces the six-cylinder engine in this line, the Windsor is equipped with the new "semi-hemispherical" V8 engine. With 188 horsepower and virtually the same weight as the New Yorker Deluxe it's definitely out of the running as the hottest traffic-light machine for '55. It should, however, be more than adequate for those owners who were previously satisfied with the low (119) horsepower of the '54 Windsor. Of the two Chrysler cars, the Windsor should be the more economical.

FIREDOM DESOTO—Next to the Chrysler New Yorker Deluxe, the Fire-Dome DeSoto stands out as the next

powerful car. Although in its natural form it's a little more staid than the rest of the line, the 200 horses galloping under its hood give it all it needs to stay with the competition. Whereas last year's 170-hp engine kept it from competing on an equal basis with others in its class, this year's powerplant will give it what it needs. In most respects the FireDome DeSoto felt like the Chrysler New Yorker Deluxe, the best compliment that can be paid to the car.

DODGE CUSTOM ROYAL—Here's the real glamour boy of the Chrysler line. And along with its glamour, it's got the power (183 horses) that will keep it from being tabbed "sissy" by the neighborhood bullies. Last year it ranked about midway in its class; this year's power package should make it equal, or better, this position.

Vision, mentioned previously, is excellent on the Dodge. In the Custom Royal you can't see the right rear fender without rising up in your seat, but you can on the Royal Lancer (the plushiest in the line), which carries a chrome fin there.

The ride in the longer '55 Dodge is considerably better than the '54 version. There appears to be less pitching over dips and bumps, and less lean when going fast around corners.

PLYMOUTH V8 SAVOY—With the longer wheelbase on '55 Plymouths several improvements are noticeable. Among these are a better ride, less lean when cornering, and more room in the rear seat. (We had a 6-foot 4-inch man sitting in the rear seat; he had to room for his size 13 shoes under the front seat and didn't bump his head.)

There's definitely an improvement in acceleration, but what it is, without checking with stopwatches, is problematical. It feels about as good as the Dodge. I'll be able to tell you in a subsequent issue after we've completed our full-scale road test.

PLYMOUTH SIX SAVOY—With an increase in horsepower, it's evident that the Plymouth Six would have better acceleration. But, for those who want stoplight-go equal to the other cars in the low-priced field, it's best that they order the V8. Last year's six with Hy-Drive tailed the field in acceleration and with the advent of the V8s this year there's little reason to believe it will improve its position. It should, however, be in the economy class.

Of the harder-to-read Chrysler instrument panels, the Plymouth is at the bottom. For esthetic balance alone, two of the instruments (oil pressure and water temperature) are located on the far side of the panel. As one Chrysler individual alibied, "It gives your wife something to read, too." (Continued on page 56)

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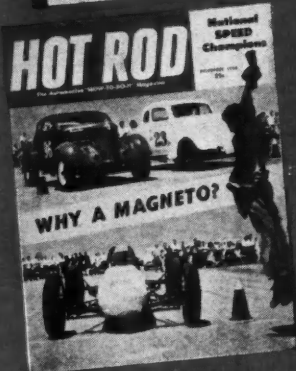
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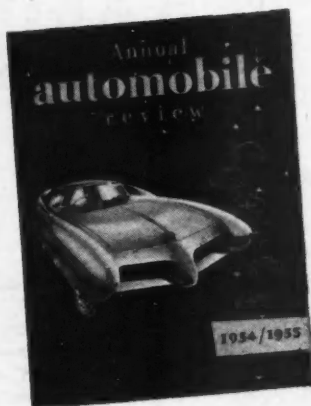
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Driving around with Walt Woron

continued



Everybody will say that the new Chevy is like a little Cadillac. The resemblance isn't confined to looks, as you'll see

SELDOM HAS THERE BEEN A CAR that year in and year out has been described in the same monotonous style: "... Not a car of high performance." "... Continues to provide good, economical transportation ..." "... A car that won't set the connoisseurs aflame with desire ..."

Who said this about what car? We did—about the Chevrolets of model years 1950 through 1954—and justly so. Now, there could be no one happier to announce that we can junk all these old phrases.

What's made the big difference? I feel it's mostly a new philosophy in thinking about their product and its relation to the competition. The Engineering Dept., headed up by Chief Engineer Ed Cole, has come out with a machine that's not only going to give fits to the other members of the Low-Priced Three, but is going to keep the other divisions of General Motors hopping to stay out of the Chevy's way.

The biggest tribute I could pay to the Chevy V8 (two of which I drove, in 162-hp and 180-hp versions) is that it has sports car-acteristics. They've taken the best of what the Corvette had (including its punch!), combined it with their standard model, and come up with a compromise that compromises no one.

My first ride in the Chevy V8 was with a GM Proving Ground test driver during a press showing on October 12, at which many newsmen got the same ride (their first). The driver showed us that the car had getaway, that it could cruise nicely around the oval, 2½-mile track, that it stuck in corners around the asphalt handling course, then turned the car over to Don MacDonald and me.

We each had stopwatches, so made some impromptu performance checks, figuring that the speedometer would be off about the industry average, 3-4 mph at 60. Since the times are not our usual highly accurate ones which we'll furnish at the earliest opportunity, I don't like to quote them exactly, but I can give you a fair comparison to last year's car. This particular '55 Chevy V8 with Powerglide scooted to 64 mph in around six seconds less time than it took the '54 Chevy to reach the same speed. At passing speeds (30 to 50), it'll lop off over two seconds, and takes around 13 seconds less to reach 80 from 50 mph. These speeds are awfully close to what the hottest cars of '54 could do—and this is only the 162-hp version!

CHEVROLET

When we were through with this car, Ed Cole, his face beaming, invited us for a ride in his "baby." From outside appearances, the two cars were virtually the same—both four-door Bel Airs—except that the giveaway was two exhaust stacks poking out from under the rear bumper.

Ed gave us a demonstration, complete with a power-on broadside that saw us ending up in the direction from which we came. In lots of cars I wouldn't have felt nearly as safe as I did in the Chevy. Ed then slipped out from behind the wheel and I took over. With three of us in this 180-hp Chevy V8, we really clobbered previous marks we've set. From 0 to 60 (we actually calibrated the speedometer on this one) we knocked off from 1½ to two seconds more than the 162-hp job. And from 50 to 80, we knocked off another four seconds, making the '55 Chevy faster in this speed range than all '54 cars tested!

Next we got out on the high speed track. Here I soon had the needle pegged at 110, and felt it would do more. In timed runs I'm sure the 180-hp Chevy will break 100 easily. Up to these high speeds, there wasn't a feeling of becoming airborne, but as with all comparatively light cars, there was "wind wander" (a tendency of the car to shift direction slightly when buffeted by gusts of wind).

Naturally, speed isn't everything (even where fast drivers are concerned). Chevrolet has seen to it that the engine sits in a chassis that stays on the road at all times. The previously mentioned broadside was one indication of this. Another is the Chevy's ability to stick in corners. The way it performed around the winding, twisting, asphalt handling road at GM Proving Grounds, I wouldn't be afraid to stack it up against many of the so-called sports cars. The long, outrigger rear springs, lowered center of gravity and good weight distribution all add up to a car that stays where you put it in corners. If you take it too fast, it'll break, as it should. But, all you need do is to punch the throttle and you're out of trouble.

With the new tubeless tires, you don't encounter tire squeal until about 40 mph, which is way above what it used to be. It might seem that the ride should be stiffer because of the better stickability, but it's its usual good Chevy ride (last year it floundered over dips, but that's gone).

Vision is notably better, what with the wrap-around windshield. While parking you can now see the right rear fender.

Another chassis improvement is in the larger front brakes and the set-up of the front suspension that appreciably cuts down nose-diving on quick stops. It is not only safer, but also less annoying than having the front end curtsy when you stop.

Motor Trend

car owner's LIBRARY

MOTOR MANUAL

By the Staff of The Motor

Published by Temple Press Ltd., London, England. Available at Autobooks, 2708 Magnolia Blvd., Burbank 15, Calif. Price \$1.50 ppd.

THIS 304-page 35th edition well lives up to its past tradition of explaining in simple but concise words the operation of an automobile.

Covering subjects from the two-stroke and four-stroke engines to accessories, this edition is highly informative—although slanted toward the British car owner. This is not to imply that the American motorist will find no use for it; that is not the case. The principles of fuel injection and synchromesh transmissions are the same everywhere.

Written jointly by the staff of *The Motor*, another compact book is added to their previous efforts. Though mainly for the average motorist who knows only minor running essentials, the Motor Manual is directed to the more informed also, explaining new developments in the field of automotive engineering. Detailed cutaway drawings and diagrams aid the reader to a more definite understanding of the subject.

THE LE MANS STORY

By Georges Fraichard and Louis Klemantaski

Published by the Bodley Head, London, England. Available at Autobooks, 2708 Magnolia Blvd., Burbank 15, Calif. Price \$6.00 ppd.

COMplete is the word best describing this 176-page book about the never-tiring or dull subject of Le Mans. With a well-written history of the race from its conception until the present time, it offers many behind-the-scenes incidents that helped make the race the most exciting ever created.

It is told by a Frenchman, Georges Fraichard, who has long been associated with the great Le Mans personalities.

Pictures of the various entries supplement the text describing the entire program of races since 1923. The necessary assortment of charts giving full statistical details is included also.

To point out one of the more interesting incidents, Robert Senechal recalls how he skidded at the Arnage S-bends in the 1925 race, putting his front wheels up on the bank. Thinking quickly, he cut down about 50 feet of fencing nearby and made a bridge. He proceeded to remove his car from this predicament and went on to win the race.

'55 Studebaker Road Test

(Continued from page 23)

GENERAL SPECIFICATIONS

ENGINE: Ohv. V8. Bore, 3 $\frac{1}{16}$ in. Stroke 3 $\frac{1}{4}$ in. Stroke/bore ratio .912:1. Compression ratio 7.5:1. Displacement 259.2 cu. in. Advertised bhp 175 @ 4500 rpm. Bhp per cu. in. .675. Piston travel @ max. bhp 2437 ft. per min. Max. bmep 145.4 psi. Max. torque 250 lb. ft. @ 3000 rpm.

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REAR AXLE RATIOS: Standard 3.92, Automatic 3.54, Overdrive 4.27.

DIMENSIONS: Wheelbase 120 $\frac{1}{4}$ in. Tread 56 $\frac{1}{16}$ in. front, 55 $\frac{1}{16}$ in. rear. Wheelbase/tread ratio 2.14:1. Overall width 70 $\frac{1}{16}$ in. Overall length 206 $\frac{1}{4}$ in. Overall height (empty) 60 in. Turning diameter 40 ft. Turns lock to lock 4 $\frac{1}{2}$. Test car weight 3620 lbs. Test car weight/bhp ratio 20.7:1. Weight distribution 58.3% front, 41.7% rear. Tire size 7:10 x 15 tubeless.

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THE MERITS of safety belts as life-saving devices are known to all safety-conscious car owners. Safety experts recommend them. The AAA favors their use. The American Medical Association recently urged auto makers to equip all new cars with them. But the buyer doesn't always get what he should in protection.

Oddly enough, in the hurry to equip

their automobiles with safety belts, few drivers have stopped to consider the properties that make the belt *itself* safe.

In a recent series of tests, one belt (for which a 3000-pound webbing strength was claimed) pulled loose at the buckle stitches under only 800-pounds load. The mounting brackets supplied with another belt under similar testing sheared under a load



Mounted to car roof with standard brackets, quality belt shows load capacity. Ask for impact rating of entire assembly when buying a belt

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of only 1246 pounds. Obviously more is involved than the word "safety" when you buy a seat belt. Great webbing strength is essential—but buckles, stitching, mounting brackets, and hardware must be equally strong to make the *entire assembly* impact-proof. The safety belt, like a chain, is no stronger than its weakest link.

Responsible safety-belt manufacturers use CAA Technical Order T.S.O.—C22 A, which governs safety-belt standards in the aircraft industry, as a guide in building passenger car belts.

Rating terminology can be important; take the frequently used term, "withstands loads of 15 Gs." This means very little unless you get an answer to the question, "15 Gs of what?" Gs are used by physicists to measure force. A G (gravity) is the weight of an object. Fifteen Gs is 15 times that weight. One belt may rate its strength at 15 Gs for a 100-pound body—or 1500 pounds—while another belt may be fully capable of resisting 15 Gs generated by a 200-pound person—a total force of 3000 pounds. The latter is, of course, the better buy. Forget the Gs—a 3000-pound rating is the minimum standard for an acceptable safety belt. A few manufacturers offer belts that exceed this by a substantial margin.

In the absence of legal standards to govern the quality of automotive belts, the buyer should know what to demand.

It is best to ask for impact ratings of the entire assembly and look yourself for ruggedness in the metal parts and for careful workmanship throughout; but there are several additional guides you can follow in selecting a seat belt, its brackets, buckles, and fittings.

The slotted angle bracket is most popularly used for attaching the belt to auto floors. The webbing is laced through the slots in the bracket and then doubled back and under. When pull is exerted, pressure and friction pull the lacing tighter. Bracket slots must be free of sharp, cutting edges or metal burrs. High-tensile-strength, heat-treated steel brackets are recommended at this vital point. Look for ample edge distance at bolt holes and webbing slots. Heat-treated, 5/16-inch mounting bolts should be supplied. When the belt is mounted to sheet metal auto flooring, heavy 2 1/2-inch washers should be used on the underside; these spread impact stresses over a large area and prevent mounting bolts from pulling through sheet metal flooring.

With the buckle, high-grade material and workmanship are the standard. A heat-treated buckle frame and heavy hinge plate are the best. Hinge bolts should be meaty and rugged.

Buckle design and function are critically important. The popularly-used hinge-plate grips the loose end of the belt between jaws formed by plate and frame; these two jaws are usually ridged and/or knurled. Their function is to grip the belt without slippage under heavy impact

strains, and yet release (manually, not automatically) when necessary—quickly and easily, when the full weight of the wearer is being supported. (This feature is required by the CAA. If a passenger should be suspended, with his full weight supported by the belt, he must be able to get free at will. He must be able to open the buckle with a light, one-handed pull. Specifications require a buckle to release with no more than a 45-pound pull on the latch while it is supporting 250 pounds.)

The best accepted hinge plate buckle is spring loaded at the plate. This moderate pressure is expected to grip the belt webbing under normal conditions, preventing it from loosening up under car motion. Under crash impacts the strain of the belt through the jaws is utilized to supply leverage, causing the jaws to tighten and obtain a slip-proof grip on the webbing.

Qualities to look for in webbing include strength and tightness of weave, resistance to fraying and—where the appearance factor is concerned—color-fastness. Nylon is gaining favor because of its exceptional strength, lightness, and flexibility. The stitching attaching buckle to webbing should be of heavy thread, sewn over a sufficient area to insure a positive hold.

Here are basic rules for any installation:

1. The belt should extend upward, diagonally across the wearer's hip (never wear belts across the stomach or abdomen in a nearly horizontal plane).
2. Never locate the mounting brackets under the seat, with the webbing curving backwards around the seat cushion and then forward again. This can put the normally not-too-secure seat under tremendous strain in an impact.
3. Mounting brackets should be installed 18 to 24 inches apart to allow for the width of passengers' hips.

A good many authorities now believe that universal acceptance of the safety belt can save from 62 to 84 of every 100 motorists who would otherwise be killed. If you are going to join the growing number of thoughtful drivers who are installing safety belts, by all means *buy right and install right*.

NOTE—Credit goes to *Automotive Safety Associates, Los Angeles seat belt manufacturer, whose belts we used to illustrate this article.*—The Editors.



A properly installed safety belt should extend down and back; it should never wrap around below seat to reach brackets

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Great bulk was in favor when first postwar Chryslers (actually warmed-over '42s) appeared, with vacuum cleaner fronts



By next year, the corners were sharply cut off and the car looked like a shoebox, a concept now quite dead (see page 17)

As we enter the most newsworthy model year in recent history, MT brings you the last in a series on

Engineering Your Modern Car

Part IV: 1948-1954 By Roger Huntington

THE SHORT PERIOD from 1933 to the late Thirties saw more improvements on the American automobile than any previous 20-year span from the standpoint of bread-and-butter engineering.

But seven years just past can match anything we've seen yet for getting big things done in a hurry. Just since 1948 we've seen major revolutions in engine layout and design, body styling, ride, and automatic transmissions—plus an entirely new field of power accessories. Engineers are even *thinking* differently these days.

But only time can bring current events into their proper historical perspective; what we think is significant today may be a lost cause tomorrow, while a little thing—something as insignificant as a curve of

the fender—can set a pattern for the future.

Make It Look Good

Body design began to evolve as an art rather than a science back around the mid-Thirties. It started faltering, with skirted fenders and fancy grillework on the radiator shape, and continued with sculptured fenders and trunks and lights in the fenders; finally by 1948 the idea of separate fenders was discarded, more-or-less-flush side panels the length of the body had been tried, and we even had one glimpse of the wrap-around rear window.

One weakness of some of the early flush-sided bodies was that the top part of the body above the belt line was the same as it was on the early postwar cars

with sculptured fenders; this introduced a large bulge just below the belt line and made the thing look like an inverted bathtub. (Remember the "pregnant" '48 Packard?) These new body lines looked a lot better when the top part was gradually widened and the bulge softened.

A very important development was the introduction of the "hardtop convertible." Here was a brilliant combination of the breezy, jazzy appeal of the convertible with the all-weather convenience of a closed sedan body. Technically it was a matter of eliminating the center body pillar, stiffening the frame, fixing front and rear side windows to seal at the contact point, and wrapping the rear window deeply around the body. The idea caught on beyond the wildest dreams of the sales boys—and today over 15 per cent of our total auto production is in the hardtop body. (Incidentally, this has made a deep dent in the soft-top convertible market.)

Early flush-sided bodies, even without unsightly bulges and the bathtub look, lacked something vital. Stylists soon decided that the vast expanse of sheet metal on the sides needed some sort of more or less *vertical* motif to break up the boxy lines. Horizontal chrome strips alone weren't going to do the job. Dummy rear fender airscops started the ball rolling, with most makers doing something along this line today. Very significant here, I think, is the sweeping two-tone styling on the late Oldsmobile 98 hardtops and convertibles, where color contrast



Packard blundered when it "modernized" the original lean Clipper. The long, wide, and not especially handsome result couldn't even be said to have the "Packard look"

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rather than massive chrome gadgetry is used to give the needed vertical flavor. This may be a pattern for the future.

The contribution of Raymond Loewy's latest Studebaker ('53 models and later) to the body design art has been debated. It's radical and beautiful, that's for sure. The low front styling is already being imitated, but whether the big boys will buy a low body at such a heavy price in interior space remains to be seen. Unit body construction, with no separate frame, might bail them out of this one.

Then there's the wrap-around window. It was a big hit, bringing wonderful new visibility for greater safety on the road, as well as a chic new style (though it effectively killed the low-drag "sedanette" or fast-back body). It will do just as much for the front end. Cadillac, Buick, and Olds went to the wrap-around windshield for '54, and the rest of the industry is following with variations in individual styling.

While all this was going on the outside of the body, interiors were undergoing a vital face-lifting. New upholstery materials (some synthetic) with increased wear-resistance, new instrument panel layouts, new foot-pedal arrangements (as introduced on Ford products), made a Taj Mahal out of utility road iron.

Revolution in the Engine Room

I always thought the old in-line, long-stroke, L-head engine had outlived its usefulness by 1933, when the chassis of the American automobile was given the modern touch. The fact that it held on another 15 years shows how hard big changes come in a mass-production industry.

But by that time, what with intensive war-time fuel research, the outlook for good super-octane gasoline at the pump within the next few years looked bright... which, in turn, meant laying down basic designs for new engines that could handle 10-or-12-to-1 compression ratios and 5000-rpm speeds without major changes. That's the real reason behind the short-stroke ohv V8. Only a short, stiff crankshaft with deeply overlapping jour-

nals can take this pounding without getting into dangerous torsional vibration. A further bonus of the short stroke is less engine friction. Overhead valves were a must to get the compact combustion chambers and unrestricted air flow path needed for 12-to-1 compression ratios. Add to this the very modest space requirement of a short V block, what with the layout of modern cars, it just *had* to be a V8!

The late "Boss" Charles F. Kettering of GM Research is often given credit for pointing the way to modern engine design as a result of some highly publicized talks and technical papers he delivered in the late Forties. Actually the big manufacturers knew the high-compression V8 was in the stars and had been experimenting with it for several years; GM just beat the boys to the punch, publicity-wise and in the showroom—and that's half the battle in our industry. Cadillac and Olds brought out the first of the modern ohv V8s on their '49 cars. The rest of the industry followed quickly, and with the introduction of the '55 jobs nearly all the manufacturers have V8 models in the catalog. The straight-eight, a prestige engine for 30 years, is dead. The in-line six still hangs on, but is no longer popular with the mass market.

All of which brings us to the question of engine performance. The current "horsepower race" was inevitable. The new engines itch to put out one hp and one foot-pound of torque for every cubic inch of displacement; they were just loafing at the low specific outputs of three or four years ago. Now the day of the 300-hp family car is in sight! Whether or not the new-found road performance is a good thing in the hands of the average driver is one of the most controversial questions in the industry today. Breathtaking acceleration can definitely be an important safety factor on crowded highways; extremely high cruising speeds can be fatal.

But there's more to our new performance than power. Current high-performing Cadillacs and Oldsmobiles are getting nearly 20 miles per gallon at 60 mph on the highway. Short strokes, chromed

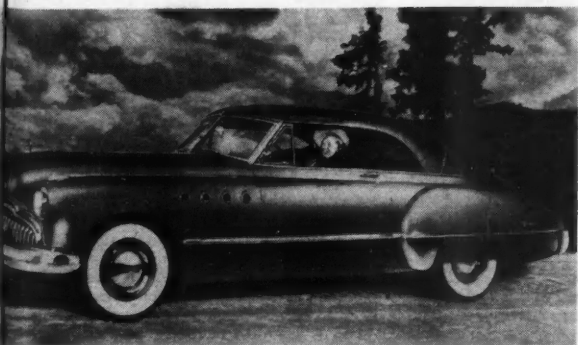
piston rings, modern precision machining, new additive oils, and improved bearings are giving a useful life of over 60,000 miles on many new V8 engines (under severe conditions) without an appreciable increase in oil consumption or loss of performance.

Push-Button Driving

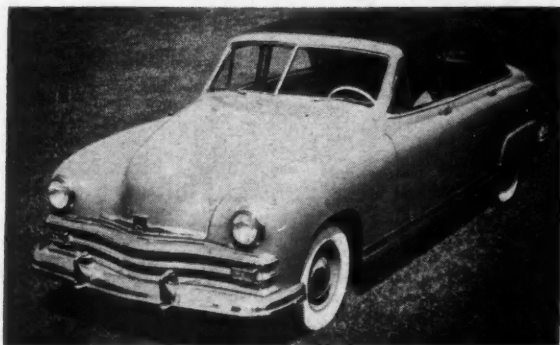
As of 1947 the GM Hydra-Matic was the only fully automatic transmission available to the American buyer (on the Cadillac and Olds); functionally, it was far and away superior to the semi-automatic boxes. In the face of this competition, it was obvious to all at this point that they were soon going to have to offer *two-pedal* driving or go out of business—in fact, transmissions in themselves were shaping up to be a clinching sales point.

The interesting thing is that, when the industry really got to work on the automatic transmission, they turned to an entirely different principle from that which had made the Hydra-Matic famous. The latter used a simple fluid coupling to pick up the load, with all the torque multiplication being done by planetary gears (four speeds forward). The new boxes used a hydraulic turbine-reactor arrangement to act as a clutch and torque multiplier in one, with maybe one or two planetary gear step-ups to help out when maximum acceleration or pull was needed. The "torque converter" had been invented many years before for marine powerplants, but this was the first time it had been tried for the road. Hydraulic torque multiplication wastes a lot of power in slippage—much more than the Hydra-Matic fluid coupling—but there is no jerk when changing ratios. Also, the complete transmission tends to be lighter and cheaper, and maintenance is easier.

Buick was the first out in 1948 with the Dynaflo Drive, followed rapidly by Packard, Chevrolet, Ford, Mercury, Studebaker, and later by the Chrysler products. (Hudson, Nash, Lincoln, and Kaiser-Willys contracted with GM to use the Hydra-Matic.) Great improvements have been made on torque (Continued on page 64)



The '55 cars will bring no lessening of interest in the hard-top. This '49 Buick claims the honor of being first one



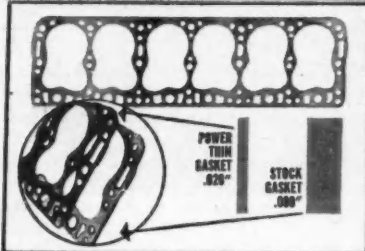
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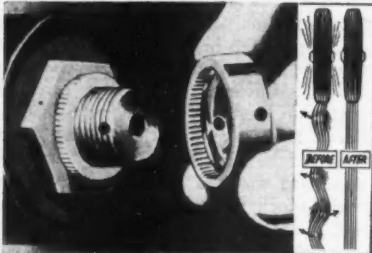
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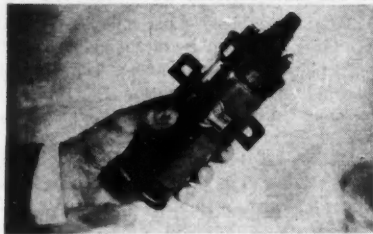
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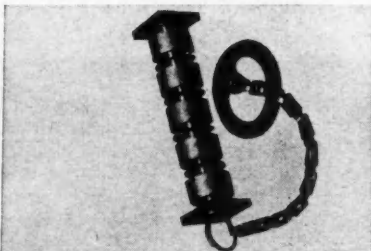
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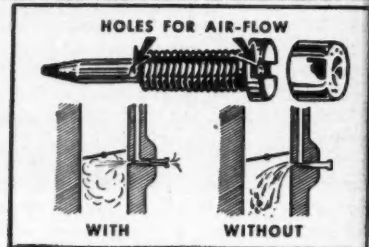
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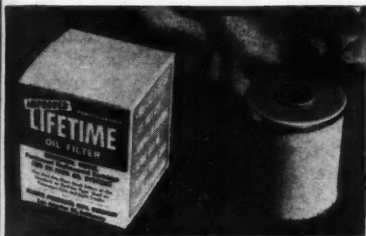


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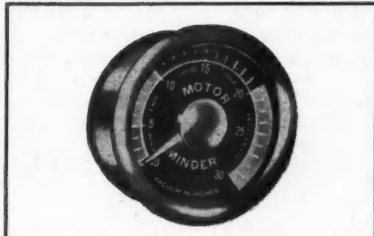
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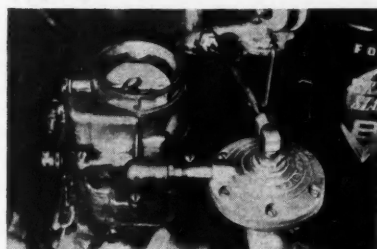
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Engineering Your Modern Car

(from page 61) converters since the first Dynaflo. For instance, some of the early designs had no auxiliary gear torque multiplication when starting out in DRIVE range; this threw the whole load on the oil coupling and pick-up was pretty sluggish. Remember?? Gradually the manufacturers went to gear step-ups, and today some of the hottest stock cars on the road use torque converters. (Other factors equal, a true torque converter still can't match Hydra-Matic either on acceleration or fuel economy . . . but the bulk of future transmission development will very likely be in this direction.

The Feather-Bed Ride

The big ride advance was the general adoption of large-section, extra-low-pressure tires on the 15-inch wheel throughout the industry. This has done more than you might think. The effect of tire pressure on ride has been well-known for 30 years, but it required very advanced tire designs to use pressures as low as 22 to 24 pounds per square inch and still get acceptable tire life and performance on the road. Wartime developments in synthetic rubber and rayon cord, plus the new cold rubber process, paved the way for the extra low-pressure tire. Admittedly, rolling resistance and cornering power aren't quite up to the older tires inflated to 32 pounds per square inch or so, but the sacrifice is slight—and ask yourself if the new ride isn't well worth it! The trend to smaller wheels and lower pressures will continue in the future.

And there have been other important ride developments since '48. The direct-acting tubular shock absorber is more efficient than the old lever type, and has all but swept the industry. Chrysler's "Oriflow" shock, featuring a new hydraulic layout, is the latest innovation. Re-pitching the rear leaf springs to give a certain amount of rear-end steering when the body rolls on a corner has given better roadability without sacrificing ride a bit (a very neat engineering trick, incidentally). Repositioning front wishbone links is helping here, too. The current trend toward wider rear springs and fewer of them has the effect of reducing the overall inter-leaf friction, always a tough enemy of the boulevard ride. And Packard may revolutionize ride again on their '55 models with a radical new torsion bar suspension system (see Oct. MT). What next?

Fifteen years ago they'd have had you in the squirrel cage if you were willing to tack on 10 per cent to the list price of a low- or medium-priced car for gimmicks like brake boosters and power steering. Today it's the latest thing. It seems all the factory has to do is dream up an accessory, engineer it to work, announce it with a flourish to the press . . . and John Q. has got to have it, on anything from a Chevy up! Examples are power brakes,

power steering, hydraulic or electric window lifts, power seat adjusters, air conditioning, automatic headlight dimming, etc. Originally these extras were developed as strictly luxury items for the higher-priced lines; the unexpected popularity in all price classes has been a pleasant—and lucrative—surprise to the sales executives.

It's all just another angle of this new public family-car philosophy that we've seen grow up in just the last five or six years. We see it in loud body styles and color schemes, 200-hp V8 engines, power accessories, and special custom equipment like the continental spare tire. The family car is no longer just a tool for getting from A to B with the least fuss and bother . . . it's a transportation tool and a plaything combined! The new thinking extends right down to the lowest-priced lines. And, happy day! It's a wonderful new trend that's molding a better and safer car for John Q., plus a healthy public interest in the technical side of the automobile (boosted, we believe, by MOTOR TREND) and—most important—selling the automobile to a larger and larger market, thus adding to the economic and industrial strength of our nation.

Looking Ahead

We may not want to admit it, but in our economy, time is virtually equivalent to money. (If this weren't true, there would be no airline business.) Obviously, then, to increase the efficiency of the automobile as a mass transportation medium, a first order is to boost the usable average speed.

The toughest barrier in this direction today is not the car, but the road it runs on. The slide rule boys are ready anytime to give you cars that can safely make point-to-point average speeds of 90 or 100 mph; but there are only a few hundred miles of highway in the entire nation today that could handle such cars and speeds. Highway development will be one of the most important factors in the future of the American automobile.

As for tomorrow's car, I hesitate to go out on a limb. But, in the foreseeable future I think you can look for more horsepower and road performance, fuel injection, lighter car weight through use of aluminum and magnesium, radical changes (even in '55, see "Spotlight on Detroit" and "Driving Around," this issue) tending toward present Detroit "dream cars" with some functional Italian flavor thrown in, more unit body construction, independent rear suspension with rear-mounted transmissions, air springs, improved tubeless tires of very low pressure, radical new brake layouts (possibly of the magnetic or maybe hydraulic-drag type), improved transmissions—but not approaching the "ideal" (Jan. MT) in the foreseeable future. And it's all yours from here!

—Roger Huntington

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ALLARD JR. highly modified '54 Cadillac engine, 3-speed transmission; DeDion-Hallibrand quick-change differential, 1st in class at Andrews AFB, overhauled since. \$4900. David C. Schilling, 1004 4th Ave., Albany, Ga.

CLASSIC CAR SALES CATALOGS: Packard, Chrysler, Lincoln, Cadillac, Pierce-Arrow, orphan and foreign cars; minimum \$5 each. Also MTR (N.Y.) Annual numbers; details for large stamped addressed envelope. A. E. Twohy, 400 N. Kenmore, Los Angeles.

UNIQUE conv. Singer 1500 chassis; body by Chia Italia Suisse; Lea-Francis engine (double overhead cams); original cost \$4900. Best offer. Mrs. Ludwig Rothschild, 211 W. Prentiss Ave., Greenville, S. C. Phone 5-2443.

JAGUAR '52 Mark VII sedan; custom green, 32,000 miles, 5-band radio, many extras; very clean; nearly new w.w. tires. \$2300 or trade, plus cash. Terry Evenson, 158th Army Band, Fort Knox, Ky.

'42 BUICK Limited limousine; dechromed, glossy black, w.w., spotlights, electric hood, doors, windows, trunk; custom interior, dash; two 4-bbl. carbs, etc. W. H. Sils III, 3 Topliff Hall, Dartmouth College, Hanover, N.H.

'54 JAGUAR XK-120 roadster; wire wheels, heater, Dunlop road service tires, showroom condition; never raced; sell or trade for Porsche 1500 Super. R. L. Venning, 10 S. Hi Lusi Ave., Mt. Prospect, Ill.

ALL-CLASSIC BOOKLET: 32 pages, 70 excellent pictures of custom-built Franklin classics. Original confidential record of transcontinental road test of the Franklin V-12; \$1. H. H. Franklin Club, Oracle, Ariz.

'25 MAXWELL touring. Beautiful condition; runs perfectly; 17-inch wire wheels, 4-wheel hydraulic

brakes. Photo available. Delivery can be arranged. \$475. R. Linz, Box 873, Hondo A.B., Hondo, Tex. CATALOGS, MANUALS, ads, etc. Beautiful, original 1929 Studebaker mint color folder \$5. Original 1938 Pontiac mint color folder \$1. General list, 15c. W. McMillan, 8412 Flower Ave., Washington 12, D.C. MTR ANNUALS! 1924 and all 1928-42, inclusive. Best offer received month of this issue. Details for stamped envelope. W. McMillan, 8412 Flower Ave., Washington 12, D.C. '03 FRANKLIN: 20th Franklin ever built. New paint, tires, and rebuilt engine. Consider anything over \$1800. Webster B. Todd Jr., Far Hills, N.J.

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FIVE-PASSENGER touring body and top for '28 Packard 8, 143" wheelbase. Will buy complete car if body is usable. J. R. Hagans, Box 31, Danville, Ohio.

PIERCE-ARROW, Lincoln or Duesenberg touring car. Must be in good condition, especially mechanically; '32 or later; 7-pass. preferred. Send price, photo, all details to: T. A. Roes, 303 Oakley Lane, Kirkwood 22, Mo.

THREE 1935 THROUGH 1939 PACKARD 120

conv. in good condition. Send list of equipment, price, full details and photo. M. L. Trimble, 417 W. Nitany Ave., State College, Penn. Phone AD. 7-2568.

FOUR-DOOR CONVERTIBLE. Body and interior must be clean; larger car preferred; send photos, details, price to: Alvin I. Porter, 502 Fallowfield Ave., Charters, Penn.

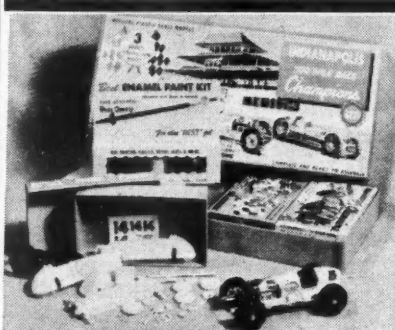
'41 CADILLAC, 60-Special Fleetwood. Must be in excellent condition. Prefer dark, Brewster green color, w.w. tires, etc. Write, quote price to W. Sydney Fisher, 116 N. Woodlawn Ave., Kirkwood 22, Mo.

1912 OR OLDER model car which could be restored by a war veteran as a hobby, price and information appreciated. Boland, 3717 S. E. Alder St., Portland 15, Ore.

TIRES. Four 4.75/5.00-19 with tubes; Manual for 1915 Detroit Electric. Neil McDade, P.O. Box 831, Chattanooga 1, Tenn.

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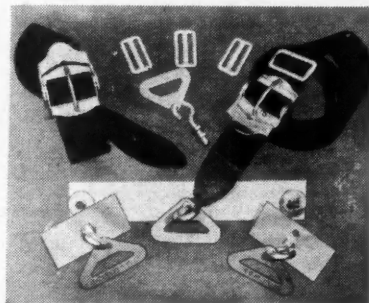
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1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: Robert E. Petersen, 1028 N. Kings Road, Los Angeles 46, Calif.

Editor: Walter A. Woran, 2293 Branson Hill Drive, Los Angeles 28, Calif.

Managing editor: James E. Potter, 12201 Malone St., Los Angeles 34, Calif.

Business manager: Theodore A. Johnson, 4717 Don Pio Drive, Woodland Hills, Calif.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

TREND, Inc., 5959 Hollywood Blvd., Los Angeles 28, Calif.

Robert E. Petersen, 1028 N. Kings Road, Los Angeles 46, Calif.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

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4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semi-weekly, and triweekly newspapers only.)

THEODORE A. JOHNSON

Business Manager

Sworn to and subscribed before me this 7th day of October, 1954.

J. A. THOMPSON

Notary Public

(SEAL) (My commission expires May 24, 1958.)

December 1954

ENGINE SHAMPOO QUART SIZE CONCENTRATE MAKES 2 GALLONS



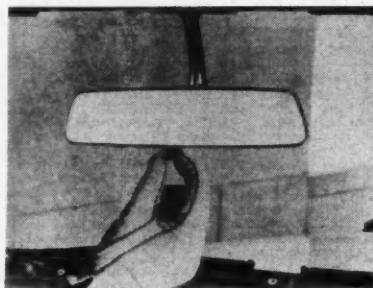
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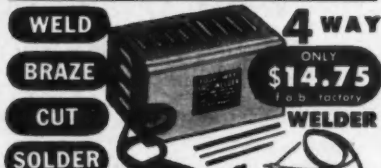
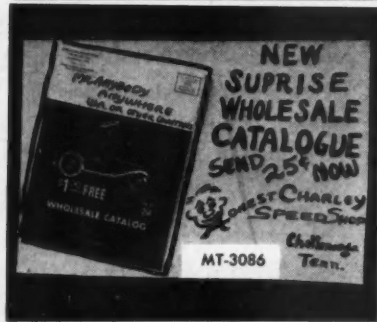
Motoring Trends



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THE LIBERTY "Gear-Shift" mirror gives a restful, yellowish-green image in daytime, has a reddish range for normal night driving, and a deeper reddish image for high-glare nighttime use. Three-way mirror uses aircraft gun-sight "beam-splitting" technique for best vision under varying light conditions. A product of Libby-Owens-Ford Glass Co., it's available at auto supply stores.



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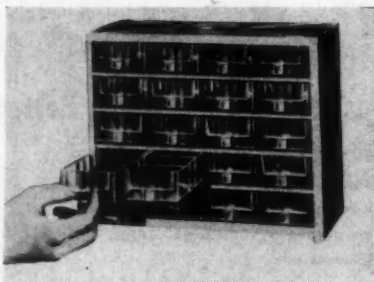
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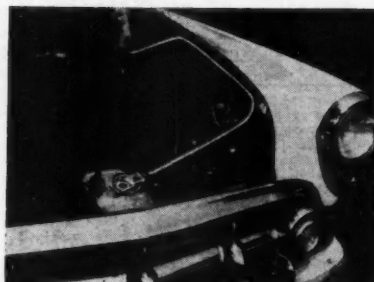
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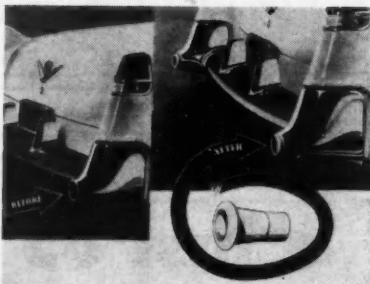
4300 Sunset Blvd. Los Angeles 29, Calif.
Tel. NO. 2-7262



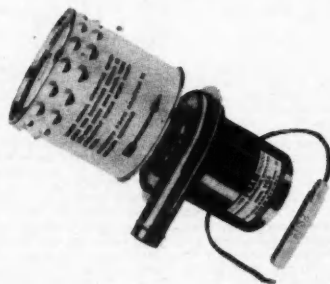
DOES YOUR GARAGE or workshop look like the aftermath of "Hurricane Hazel?" Using "See-Thru" cabinets for parts filing is a good way to start your clean-up campaign. Cabinets have rubber feet, crystal-clear, spill-proof drawers, adjustable dividers and identification labels. Unit shown, \$7.95. Other sizes available. General Industrial Co., 5738 N. Elston Ave., Chicago, Ill.



IF YOU'VE WANTED a hood lock on your late-model car, then here's your wish-come-true. The Aldo Universal Hood Lock comes in a do-it-yourself kit with steel control cable, control handle, hardware. Fits cars with striker-bolt-type hood latches. \$5.75 from Superior Screw and Mfg. Co., Inc., Chicago 13, Ill. Also available at leading automotive and hardware stores everywhere.



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THE SPECIAL plasticized filtering paper in the Fram Positive Crankcase Ventilator is responsible for a guarantee that boasts of 99.5 per cent efficiency in removing dirt and dust from the incoming air. A six- or 12-volt motor draws air through the cartridge, circulates it through the crankcase, and forces acid-filled blowby out the road draft tube.

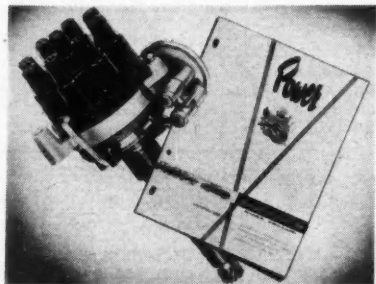
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CARRY a paint kit in your coat pocket? It's possible with MoPar's fountain-pen-type touch-up paint applicator. A steel spring automatically snaps a tiny brush into position; a reservoir holds a supply of paint that matches the exact color of your car. Some 80 different hues (Chrysler Corp. colors) are offered in these handy touch-up "pens." Available at MoPar Parts Division dealers.



NUAGANE (for leather) and **Pevac** (for plastics) will put new life, look, and feel into cracked and faded materials. Flexible and waterproof, both renewers come in 24 colors including gold and silver. \$2.50 per can, 95 cents for thinner and degreaser. (Add 25 cents for postage and handling.) Write to Grays Harbor Motors, 1st and G Sts., Aberdeen, Wash., for additional information.



HARMAN-COLLINS, famous for hot cams and other speed equipment, now offers the Model 1500 Dual-Coil ignition system for '49-'53 Fords. Comes with coil bracket assembly, all necessary fittings. Send for free "Power" catalog for a look at the full line of H-C products. Harman-Collins Sales Corp., 5552 Alhambra Ave., Los Angeles 32, Calif.

December 1954



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AIR LIFTS slip inside coil springs and inflate with air to cushion and support spring action for a smoother, safer ride. You don't sway or lean so much on curves or "dip" on hard stops. They also take bumps from the road and cut tire and repair bills. They're simple to install and factory guaranteed. See your favorite dealer or write for details, specifying make and model of car. Write Dept. 512.

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Air Lift in normal riding position.

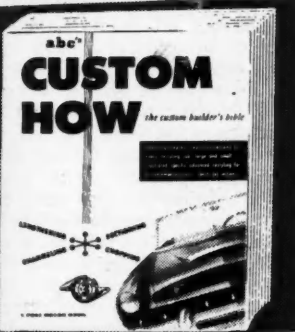
Air Lift absorbing stress of curve.

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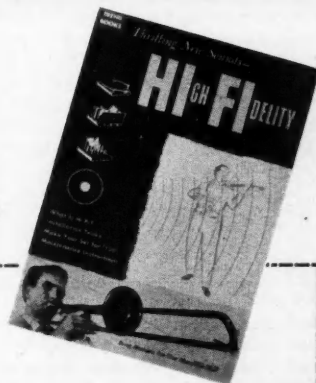
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How to Stop Acid Corrosion and Increase Engine Life---

By WINTHROP A. JOHNS

A timely report on the major cause of engine wear—and the answer to top performance and power for 100,000 miles and a probable 1,000,000 miles out of every auto engine.

RECENT developments in our laboratories, the Canadian National Research Council and the laboratories of the oil companies have shown the way to stop engine wear almost completely by a method that is almost too simple to be true. Before going into the whys and wherefores of how this method works, it might be well to look into the real causes of engine wear in automobiles operated under various conditions. In spite of what most people believe, friction has little or nothing to do with the "wear" that destroys the parts of your engine, sooner or later calling for replacements. The oil that you have in the engine to provide lubrication does just that. It prevents metal-to-metal contact. It also acts as a carrier for impurities, such as varnish, water, and acid. John Bentley, famous racing driver and editor of *Auto Age* says: "It is a demonstrable fact that the greatest enemy of your engine—the most damaging single influence constantly at work in shortening its life and lowering its efficiency—is acid. This acid does not come from the lubricating oil but from the gasoline burned. In other words, it is an inevitable product of combustion. Not generally known is the fact that gasoline contains about one part per thousand of sulfur. Thus, in every 1,000 gallons of gasoline (sufficient for about 15,000 miles of driving) there are some six pounds of sulfur. That's enough to produce five gallons of strong sulfuric acid. In addition, leaded gasolines also contain appreciable quantities of bromine and chlorine, so that when the gasoline is 'exploded' or burned in the cylinders, the products of combustion include carbon dioxide, sulfur dioxide and trioxide, together with hydrogen bromide and chloride and, of course, water vapor.

"Now as to what happens. Invariably, small quantities of combustion gases seep past the piston rings and enter the crankcase where they combine with the water vapor. Of these noxious blow-by gases, sulfur trioxide has the greatest affinity for water, which it immediately

absorbs to form sulfuric acid. In turn, sulfuric acid attracts more water which draws the remaining gases to produce a variety of other destructive and corrosive compounds such as hydrochloric, hydrobromic and carbonic acid. The last-named (derived from the carbon dioxide in the blow-by gases) occurs in such large quantities that its effects probably are more damaging than those of all the other acids put together.

"Tests by the International Nickel Co. showed that carbonic acid has the power to corrode (eat away) iron at the rate of one-third of an inch per year. Theoretically, the products of combustion in the average engine are enough to form a pint of acid for each day run, given the requisite amount of water which is never lacking. In cold weather you can actually see water drip out of the exhaust pipe of your car. But for crankcase ventilation which gets rid of the greater part of these harmful gases and keeps the temperature below 190° F. (the critical point for water condensation) you can imagine what would happen to the bearings, pistons, rings, cylinder walls and valve gear.

"Even as it is, the relatively small quantity of active acids tends to have the same damaging effect on metal as a bunch of termites constantly boring away at a wooden beam. Furthermore, these strong acids attack the fatty oils (organic compounds) which are the product of incomplete combustion, and the end result is the varnish that sooner or later gums-up piston rings and other components. As a matter of fact, an interesting parallel is to be found in the plastics industry where standard procedure is to catalyze organic compounds of low molecular weight under heat and pressure, to form heavier molecules or resin (varnish)."

ALKALINE oils go a long way towards overcoming this acid action—WHEN THEY ARE NEW. But in the upper cylinder region where there is very little oil circulation and a very



Mr. Winthrop A. Johns, Mechanical Engineer (M.I.T.) and member of the Society of Automotive Engineers, who tells here of his 14 years of experience in combatting engine acids by means of his magnesium alloy neutralizing device.

small amount of oil, these alkaline reserves are completely used up within a very short time after the engine is started. With cold parts, water condenses in relatively large amounts in this area making a perfect acid "still." To combat this acid condition in this upper cylinder area requires then more than the alkaline oils can supply. Early in our testing program, we found that adding a very small amount of magnesium alloy to the engine system would hold the mineral acid formation in check and result in almost complete elimination of wear. Since the wear figures which have resulted from the use of the magnesium alloy are about one-third of

EFFECT OF MAGNA-POWER ON ACID IN DRAIN OIL

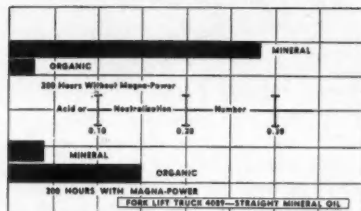
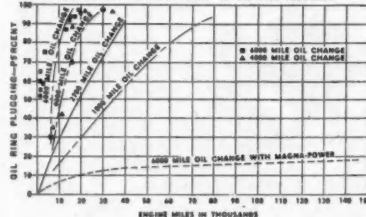
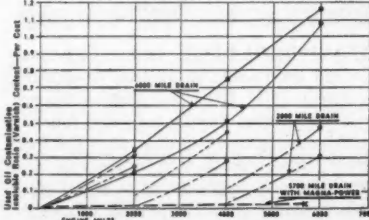


Chart (above) shows how plug reverses acid formation resulting from combustion, promotes build-up of detergent non-corrosive organic materials. Flat 6000 mile curve (below) indicates greatly increased resistance of treated oil to sludge formation, ring plugging, even after huge mileage.

EFFECT OF OIL DRAIN PERIOD ON OIL RING PLUGGING



RATE OF OIL CONTAMINATION IN PASSENGER CARS



(ADVERTISEMENT)

those shown under the same conditions using alkaline oils, we can only conclude that the oil with water dispersed in it is acting as an electrolyte and that the magnesium is providing electrons to discharge the hydrogen ions (thus destroying the acids) in this upper cylinder area. Since this is true, then the effective area of the magnesium in the engine is not limited to its size and shape but is extended electrically to the entire inside of the engine that gets bathed by the oil.

The acids that normally form are not only strong but they are very thirsty compounds and tend to draw and hold water to a marked degree, as pointed out by Mr. Bentley above. Sulfur trioxide for instance will hold water until it itself boils at over 500° F., so that once this acid forms it must be destroyed or little by little it will destroy the engine. It cannot be removed by heat, filtration or any known process. The formation of acid is then self-accelerating. The acids draw water that draws more acids that draw more water . . . When the acid is destroyed by the magnesium in the alloy, water is no longer held and without water the acids cannot grow.

Thus the vicious circle is interrupted. In used drain oil there are two kinds of acid; strong mineral acid that will attack metals and weak organic acids that are not really acids in the popular sense but fatty oils (similar to cooking oils and bacon grease). The burning of the gasoline in the cylinders is never complete. The blow-by gases always contain some raw gasoline, peroxides, and other organic fatty compounds some of which will react with alkali to form soaps. These fatty compounds are known as organic acids. They are generally too weak to attack metal parts and are oftentimes detergents in their own right. Field testing shows that the important change in the drain oil is in the character of the "acid" and engine varnish content.

NEW DIRECT WAY TO KILL ACIDS MAKES AN AMAZING CHANGE IN THE CHARACTER OF YOUR OIL

When the acids eat the magnesium alloy in the Magna-Power they are destroyed. Without acids, water is no longer held. Without water, acids cannot form. The vicious circle is interrupted. Less sludges, gums and resins are formed.

Without magnesium, the strong or mineral acids build up to a point where their formation rate is equal to the rate of their usage in destroying the metal



parts and in the interaction with these organic acids and fatty oils. This in-

teraction or polymerization results in gums, resins, and varnish that are the basic cause of what you call carbon deposits. These deposits form in the cylinder head on the top of the pistons and behind the piston rings. The varnish also coagulates with sooty material (also blown by) to form sludge that deposits in various parts of the engine.



When the magnesium is used, the strong acids are reduced to about one-tenth of their former value, while the organic or fatty oils (acids) increase by about the same amount. (In fact we are not sure that there are any at all, since the accepted testing method may not fully separate the mineral from the organic acids.) The most important change however is in the varnish, gum and resin content since this is reduced by about 50 to 1. Evidently, in the normal course of events, the fatty oils or organic acids are changed into the varnish by the action of the mineral acids either by direct combination or by catalyzed polymerization. Thus, by this simple magnesium reaction, the engine is freed from the constant drag of acid etching and the normal build-up of harmful deposits. One very important point often overlooked in analyzing the results of wear on an engine is that the products of acid corrosion are themselves abrasives. For instance, one end product of acid attack of iron is iron oxide which you know as rust, used commercially as rouge, an abrasive formed right on the surfaces you are trying to protect by a film of oil. Aluminum forms aluminum sulphates, oxides, and carbonates, all of which form in tiny hard crystals with sharp edges. When these break away from the surface they scratch and tear both the aluminum and the iron of the cylinder wall. Thus in a normal engine it is impossible to separate the effects of friction or abrasive wear and those of acid corrosion since the one contributes to the other. When the acids are eliminated these secondary abrasives are also eliminated. The salts that form on the magnesium stay there until removed by wire brushing. They have never been known to circulate in the oil. The results we find in field testing consistently show a reduction of 5½ or 6 to 1 in wear in stop-and-go service and as high as 10 to 1 in normal everyday passenger car use.

The Canadian National Research Council (Canada's Bureau of Standards) has this to say:

"Adding certain metals or chemicals to automobile oil will greatly extend its useful life.

"To the motorist this means that he

may be able to drive for 7,000 miles or more without changing oil, instead of the usual 1,000 or 2,000 miles.

"Several years of laboratory work has shown that the metals Lithium, Potassium, Sodium and Magnesium or some of their salts or oxides slow down the oxidation that destroys and contaminates the motor oil. Good results were shown on two test vehicles.

"The National Research Council suggests that a piece of one of the metals could be placed in direct contact with the engine oil by attaching it to the car's oil drain plug . . ."

SINCE THE METAL PARTS OF YOUR ENGINE NEVER TOUCH EACH OTHER WHY DO THEY WEAR OUT?

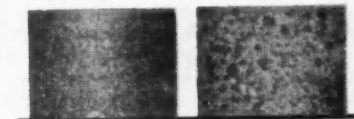
The foregoing report by Mr. Johns gives you the technical side of the story. But it all boils down to this:

Inside your engine a film of oil separates all metal parts. You change your oil frequently, yet your engine "wears out."

Or, is the engine eaten away by acid?

WHY SULPHUR IS THE REAL ENEMY OF YOUR AUTO ENGINE

The gasoline you buy has sulphur in it. When sulphur burns it makes sulphuric acid—right inside your engine. Sulphuric acid eats metal; it destroys detergents and spawns more acid. Little by little your engine is eaten away. To combat this damage, most oil companies are now using anti-acids in their oils. But what happens when these compounds are overcome? Your engine corrodes once more! Acid is one of nature's methods of reducing metals to their original primitive state. Most major oil companies have proven that acid corrosion is the major cause of engine wear.



The bearing surface at left is from an engine with Magna-Power after 112,000 miles in 11 years. It is still good for many more years of service and 4 times the miles. At right is one from an unprotected engine after 63,000 miles. IT IS WORN OUT!



Win Johns says about the original test car: "This 1940 Ford V8 now has 152,000 miles without overhaul. It has amazing power! It will go ¼ mile from

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standing start in 21 seconds! This with spark plugs with 60,000 miles! I don't expect to live long enough to wear this engine to the first overhaul. At the present rate of wear it will run at least 700,000 miles."

How would you like to drive a car for 11 years—100,000 miles—spend not a penny for repairs and find that it gives you more pick-up, more gas mileage, more efficiency than when it was new? Tear it down, "mike" the parts and find that there is hardly a sign of pitting, that all parts are still within manufacturer's tolerances! That all exposed surfaces have a mirror finish! Unbelievable—yes! But . . . amazingly true—as the findings of hundreds of field tests in the last decade have shown!

HERE IS THE STORY

In 1940, Mr. Johns, while engaged in developing a revolutionary new aircraft engine, first formulated the theory that the cause of engine destruction was not friction, not oxidation, not carbon . . . but *acid erosion*! (Other independent research seems to corroborate this finding. See S.A.E. Report #476 on "Investigation of Sulfur in Motor Gasoline," Summer of 1950.) To prove his theory Mr. Johns tried various methods of neutralizing free acid in oil. After tests with various substances, it was found that a "sacrifice" neutralizer was superior to a "chemical" neutralizer. The *Magna-Power Acid Neutralizer* represents the culmination of 10 years of experiment and field testing. The results of the field testing prove that acid erosion is responsible for at least 90% of engine wear, and that this acid erosion can be reduced to practically zero!

But that isn't all . . . Even House-to-House and Store-to-Store delivery trucks with over 120,000 miles, are in superb condition—normal engine life, with overhaul, is 20,000 to 40,000 miles! It will take years before the engine life of an ordinary automobile equipped with the Johns Magna-Power Acid Neutralizer can be determined. At the present, factual data indicate that 1,000,000 miles is possible! (The limiting factor—metal "fatigue" rather than wear!)

HOW MAGNA-POWER REDUCES OIL DIRTINESS

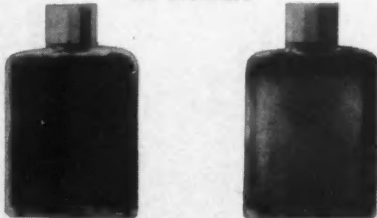
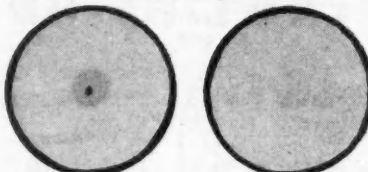


Photo at left shows a bottle of oil taken from a fork lift truck after 200 hours of operation without a Magna-Power. Notice how dark the oil appears. The light hardly shines through. You can see visible evidence of oil deteriora-

tion. The photo at right shows a sample of oil taken from the same lift truck; after 200 hours with the Magna-Power acid neutralizer the oil is almost as clear as when it was first changed. Illustration below shows blot test of oil samples taken from bottles above.

Fork Lift Truck Straight Mineral Oil

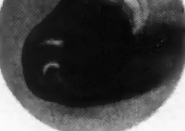


Why take a Gasoline Pill to Cure an Engine Headache When You Can Get Rid of the Cause?

Why use additives in your gas & oil when nature has provided an antidote to the deadly sulphuric acid? Why destroy the natural powers of gas and oil with adulterants when you can eliminate the impurities in the first place with a Magna-Power Acid Neutralizer!

The gas companies are spending MILLIONS to add XY and ABC to oil and gas in order to stop knocks, corrosion and deposits caused by acids! Here is the only *permanent* cure for acid deterioration. It costs you \$2.95. But if it does not save you \$295.00 in oil changes, ring jobs, and gas mileage a refund is yours—and no questions asked—even if it takes 5 years to prove it to yourself!

2 1/2 Times around the World—61,810 miles on ONE Set of ordinary SPARK PLUGS



Yet they still perform as though the engine was made for them!

Another spectacular success story for the Magna-Power Acid Neutralizer—with the porcelain insulators "shot" on three of them (due to accidental breakage) this set of plugs still does not misfire. The engine still idles perfectly, and smoothly—and picks up speed quickly without bucking. When new plugs were *finally* installed, there was no detectable difference in performance and economy.

How Is This Possible?

These plugs might even last another 60,000 miles or more. This amazing record of spark plug endurance was made possible by eliminating the corrosive acids from the engine oil!

We know that oil gets into the combustion chamber since the character of the deposits on top of the piston and in the cylinder head is affected by the kind of oil that is used. The spark plug is under heat only during the power stroke which is about 1/4 of the time.

The rest of the time is used to push out the burned gases, draw in a new charge, and compress it. Somehow the magnesium nullifies the corrosive compounds in the oil or gets in the way of their acting, reacts with peroxides or acts as an anti-catalyst to prevent the formation of short-circuiting materials that cause spark plug failure. Field results show astonishing spark plug life where even high compression engines such as Cadillac and Oldsmobile run perfectly for 25,000 miles or more without even removing the spark plugs.

SEE with your OWN EYES

THE AMAZING ACID-NEUTRALIZER ACTION OF MAGNA-POWER CRANKCASE OIL DRAIN PLUG

Put a MAGNA-POWER Oil Drain Plug into a small glass. Pour enough fresh vinegar, citrus fruit juice or other acid liquid into the glass to submerge the magnesium alloy rod, made to extend up into the oil chamber from the screwed in drain plug base. Then watch the foaming, effervescent effect of this alloy rod as it neutralizes the acid in the liquid. That's how the amazing MAGNA-POWER Oil Drain Plug combats destructive corrosive acids as they form in your crankcase. You then see how your very small investment in this simple but marvelously effective accessory may add many thousands of miles to the pep, performance and endurance of your car. That means hundreds of dollars in value added to your investment in a fine modern car—which is probably your second heaviest investment next to your home!

Here are the ANSWERS to some of the QUESTIONS you may have:

If this is so good, why don't the new car manufacturers put one in each engine?

The situation is similar to the way oil filters gradually became accepted. For years and years it was only the fleet owners and those with courage enough to believe their eyes who gained the benefits of cleaner oil by using those "new fangled" oil filters. Another reason why they may never be put on new cars is that they extend the "break-in" period to 25,000 or 30,000 miles, so they should be installed after 2,500 or 3,000 miles.

How soon can I notice a difference in my engine after I install a Magna-Power?

The oil shows cleaner even after the first 1,000 miles and by the time you reach 5,000 miles there will be a noticeable increase in power. The best way to measure that is to time the acceleration from 10 to 50 mph over the same road in the same direction and under the same weather conditions. Do this now before you install a Magna-Power, then later you can check and compare.

Will any harm be done if I use any of the special oils sold at service stations to be added to the regular oil?

None that we know of; however, for passenger car use we can't see much

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use of them except to give an occasional cleaning. With 1/10th the wear, the average passenger car will go without overhaul for 50 or 60 years—and after that we think it's a matter of "Who cares?"

Be very careful if any dopes are added to the oil; they may seem to give temporary benefits but later break down to form sticky gum or varnish. Molybdenum disulfide in the so-called "Moly" oils is mainly useful if you lose all your oil or water and the motor overheats.

WE HAVE SEEN NO FIGURES OF TESTS WHERE SOME ENGINES WITH AND SOME WITHOUT THESE ADDED DOPES WERE OPERATED OVER LONG PERIODS OF TIME.

How can you increase compression even without acid in the oil?

When an engine is new the compression is lower than the figure reached after 5 or 6 thousand miles. The wearing in of the parts makes for better seal-

ing of the rings and valves. The surfaces that are developed are continually being eaten by the acids; so that when the rate of destruction by the acids becomes greater than the "wear in," the compression starts decreasing. Without the acid acting these surfaces build up mirror finishes, valves seat more perfectly with a general increase in sealing ability.

Will the Magna-Power affect the operation of hydraulic valve lifters?

The Magna-Power is highly recommended for this type of engine: it apparently inhibits the formation of the gums and resins that cause trouble for these lifters by making them stick. Our experience to date has been 100% favorable—in fact some users report that they are able to use regular oils instead of the new High Detergent oils. We believe however that you should do all you can to protect these lifters, so we recommend that you use both the Magna-Power and the detergent oils.

WHAT MAGNA-POWER USERS WRITE:

Enclosed is my check for \$2.95 covering cost of one (1) MAGNA-POWER plug for 1954 Ford V-8. Please rush this order as I want to use the plug when I next change oil shortly. I have had these plugs in my last two cars and believe them to be well worth their trifling cost. Since I seldom drive a car over 35,000 miles I cannot testify as to the merit for longer usage, however, the theory advanced for use of such a device is logical and I will continue to use MAGNA-POWER acid neutralizers in my cars, AND RECOMMEND THEM TO OTHERS.—D.W.C., Minneapolis, Minn.

I have put the Magna-Power acid neutralizer in my 1949 Chevrolet when the car was purchased new.

In servicing the Chevrolet for the past two years, I have found that the only thing required to keep the car in good running condition was to clean and reset the ignition points, and clean and set the gaps on the spark plugs. Amazing as it seems, the plugs are still in perfect condition after 35,000 miles. I usually have to replace plugs at fifteen to twenty thousand miles.

The oil consumption is low, as there is seldom any oil added from oil change to oil change.

—R.D., Perth Amboy, N. J.

Please ship me one Magna-Power acid neutralizer to fit a 1953 Chrysler New Yorker. The two previous neutralizers you sold me were very satisfactory.

—J.G.S., Greenwood, S. C.

I put it in my 1950 Hudson and it performs better than ever before! It really has a noticeable difference in pick up. I also noticed that for the first time, the oil dip stick cleaned up by itself after installing the Magna-Power. Thanks again for your letter. When I first put in your Magna-Power I didn't notice much difference until after 50 miles and now with 1,500, the car goes better all the time. I now have 38,500 miles on the car and plan to keep it for 10 years.

—R.A.M., New York, N. Y.

I wish to bring to your attention the remarkable performance of your Magna-Power acid neutralizer in the 1948 Ford car which I recently traded in. The plug was installed when the car was almost new. After 29,000 miles of rather hard use, oil consumption and power were equivalent to new car performance, while the crankcase oil remained clear and free of sludge at all times. Needless to say, I have installed a Magna-Power in my new car.

I congratulate you on an important advance in automotive development.

J.C.R., Fanwood, N. J.

On Aug. of 1952 I purchased a Magna-Power Acid Neutralizer auto crankcase drain plug for my 1949 DeSoto car. I used this for some 25,000 miles with remarkable results:— 1. Much more power and pep. 2. Better mileage on both oil and gas. 3. Remarkable spark plug life. Actually my car had more "get-up-and-go" at 46,000 miles than it had at 5,000 miles. I attribute it all to the plug I purchased from you people. I actually sold my car for over twice its retail value, just because of the pep and snap it actually had.

—R.F.H., Ashland, Ohio

In April, I purchased a "Magna-Power" plug for my 1951 Buick. It has lived up to the things you said it would. Now I would like to purchase one for my other car. Enclosed find check for \$2.95 for one "Magna-Power" plug for my 1953 Chevrolet Station Wagon, Series No. 150.

—K.H.B., Middlebury, Conn.

Just traded in my 1951 Mercury—used your Magna-Power for 28,000 miles. Car has as much power as when new—and is using no oil. Think your product must have helped a lot since much of this mileage was city stop and go driving. Please hurry the new unit and thanks a lot.

—H.E.G., Indianapolis, Ind.

I have installed the Magna-Power acid neutralizer on several cars, some with as many as 10,000 miles on them.

In each case, I have found evidence of increased performance. However, the more noticeable has been the decreased amount of servicing required. The spark plugs have longer service periods, and the crankcase oil seems to stay free from sludge for longer periods.

The compression tests made on these cars have either remained the same, or have increased over periods of use of approximately 20,000 miles.

The mileage per gallon of gas has not decreased, and the oil consumption has not increased. These are real indications of better economy.

From these indications, it may then be concluded that the Magna-Power acid neutralizer does the job that you claim it can do.

—J.K. Nixon, N. J.

My car has already gone 55,000 miles. Will your Magna-Power help it?

Our tests indicate that if a passenger car engine uses less than a quart of oil each 500 miles then the Magna-Power will help. Beyond that it may help but we aren't sure.

What is the effect on oil change periods and filter life?

We find that in passenger car service 4,000 mile oil changes are adequate and even then there is some doubt about the necessity of change. Filter cartridge life doubles or triples due to the decreased amounts of sludge and resins formed; they are good for 12,000 or even 16,000 miles.

How are the Magna-Powers for small air cooled motors?

Magna-Power is good for any engine that has an oil reservoir; it may be effective on two-cycle engines where there is no oil sump, since the anodic effect may help on wear.

Won't the new "heavy duty" oils do the same thing as your Magna-Power?

No. The results of these oils show wear reductions to 1/3rd or 1/4th in passenger car service, while the Magna-Power gives consistent figures of 1/10th the former wear in the same type of service. Used together we believe that even greater reductions can result. These oils will however make it appear that the oil gets dirty sooner because the detergents that have been added keep the soot and carbon particles suspended in the oil so fine that they go right through the filters. Even so these particles are not large enough to cause trouble.

There are only two things to remember when you use a Magna-Power. Have your service station man wire brush the magnesium part at each oil change, thus exposing a fresh surface; and change your oil filter regularly. Complete instructions are sent with each plug.

EXPERIMENT WITH THE MAGNA-POWER NEUTRALIZER AT OUR RISK

If you are not satisfied with the way it works, send it back, at any time (years from now, if you choose), for an immediate refund.

Canadian orders filled from Toronto stock (add 10% sales tax). Canadian checks, money orders or cash accepted.—Available for foreign and U.S. passenger cars, trucks, buses, tractors and many other engines.

GET ONE NOW FOR YOUR NEXT OIL CHANGE. MAGNA-POWER WILL HELP ANY ENGINE THAT USES LESS THAN ONE QUART OF OIL EACH 500 MILES—OR YOUR MONEY BACK.

JOHNS MFG. CO., Dept. 3-M, Dunellen, N.J.

My car is a.....(make).....(year). Please send me, postpaid, a MAGNA-POWER acid neutralizer. I enclose \$2.95. I understand that it is sold with an unconditional guarantee of satisfaction or my money back!

Name.....

Street.....

City.....State.....

MOTOR TREND INDEX Complete Index of Articles from Jan. '54 to Dec. '54

NOTE: This index is a compilation of articles which have appeared in issues of MOTOR TREND from Jan. '54 through Dec. '54. We're presenting it as a convenience for readers who may have missed an article in which they are particularly interested. The articles have been placed under specific categories for easy reference, and the names given are not necessarily the titles of the articles, but are listed by subject. This index does not include such departments as "Spotlight on Detroit," "Classic Comments," "European Newsletter" and "MT Technical Service"; however, the most important cars and items from these have been listed under other applicable categories.—Editor.

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With new method of accurately adjusting front wheel bearings, you can gain 5000 extra tire mileage and stop vicious side sway due to loose wheel bearings. Fits FORD, MERCURY, LINCOLN, CHRYSLER, DE SOTO, DODGE, PLYMOUTH and STUDEBAKER. Order special for WILLYS. Send \$1.00 to DRIVE-STRATE, P.O. Box 4093, Glendale 2, Calif.



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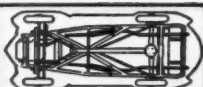
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Stude.....	51-54
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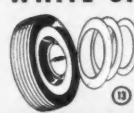
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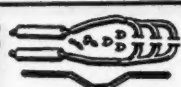
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Sets include headers, header extensions, mufflers, tail pipe, clamps and brackets.

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HOT ROD

\$4.95

FOR WHIP-RACING THRILLS anywhere, anytime. The All American "Hot Rod" is precision built, beautifully finished, ready to race. Strong enough to stand on, the Hot Rod comes with built-in ruggedness and the ability to take real punishment. The die cast, all metal body with baked enamel finish, is highly detailed even to a steering wheel, hood strap and realistic instruments on the dash. Machine turned aluminum hubs, authentic rubber tires and plated steel axles guarantee long life and thrilling performance. Here is an ideal gift for children young or old!

SUPER SPECIALS

(DISCOUNT CARD HOLDERS TAKE AN ADDITIONAL DISCOUNT B ON THE BACK OF YOUR CARD)

⑩ MOON WHEEL DISKS
Set of 4
\$12.95
15 in. or 16 in.

⑪ SAUCER WHEEL DISKS
Set of 4
\$12.95
13, 15 or 16 in.

ELECTRIC TRUNK AND HOOD KIT (Specify)
\$6.75 ⑩

BRONZE OIL FILTER ⑩
\$12.95
3 Moly-Paks \$1.00

THIN HEAD GASKETS ⑩
\$4.95

CHROME OIL BATH AIR CLEANER ⑩
\$5.95

⑫ CAP LOCKS (2 keys)
\$2.95

⑬ WIRE WHEEL DISC Four Genuine Calvevar with wheel locks
\$34.95

ELECTRIC DOOR KIT (Two Doors)
\$14.95 ⑫

AIRWAY COMPASS ⑫
\$1.98

"DUMMY" REAR AERIALS ⑫
\$4.95 PR.

"BEST" COIL ⑫
\$9.15

⑭ SKIRT LOCKS 2 Keys
\$4.95

DUAL HIDEAWAY REAR AERIALS with 15' lead
\$12.50 ⑭

KUSTOMIZE KIT ⑭
\$4.95

PHONEE LITE ⑭
\$5.95

CADDIE LITE RIMS ⑭
\$6.95 PR.

TEARDROP SPOTLIGHTS ⑭
\$14.95 EA.

⑮ STEERING WHEEL ⑮
32-48 Ford.....\$21.95
49-54 Ford.....\$19.95

MCRAY PROTECTO ROD ⑮
\$1.95
Keep radiator clean

RAY BROWN'S SAF-TEE BELT ⑮
\$9.95
Each person

WOLF WHISTLE ⑮
\$3.45

FOG HORN ⑮
\$12.95

BERMUDA BELL ⑮
\$4.75



AUTO DISCOUNT CO.

1529-T-12 VICTORY BLVD.
GLENDALE 1, CALIF.

PRICES F.O.B. GLENDALE - ADD 3% TAX IN CALIF.

← GOT YOUR DISCOUNT CARD YET?

.....

NAME.....

ADDRESS.....

CITY.....STATE.....

CAR MAKE.....YEAR.....BODY STYLE.....

RUSH ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

ITEM ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺

☐ FULL PAYMENT ENCLOSED, OR ☐ 25% INCLUDED, BALANCE C.O.D. ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺

T-12

NOW! a metal filter-element that lasts FOREVER—lets you drive up to 10,000 miles without changing oil

NOW 1 SIZE
1 PRICE For Most Cars

Only \$6⁹⁵ (fits present filter case) ppd.

Complete Filter Unit incl. case & bracket—(for cars without a stock filter)...\$12.95

*Life-Time "Full-Flow" Element (necessary for some cars—see listing below)...Only \$11.95



IMPROVED Life Time OIL FILTER ELEMENT

AT LAST!
YOU CAN

End Cost of Cartridge Replacements
Cut Oil Consumption 90%
Increase Engine Life Up To 40%

WHY ordinary filter packs are basically inefficient

REMOVE DETERGENTS New cotton, paper, etc., packs do remove abrasive particles. They also, however, soak up to 40% of oil additives.

PERMIT "TUNNELING"—Oil pressure soon causes channels, which pipe unfiltered oil directly back into engine.

REQUIRE REPLACEMENTS—Most manufacturers recommend replacement every 3 to 5 thousand miles. The Improved LIFE-TIME Filter can never wear out!

ELIMINATES

"HIDDEN GRINDING"

Assures Total Filtration

From the laboratories of jet aircraft scientists comes the most incredibly efficient filter ever developed—the only filter known that removes all harmful dirt, carbon, and sludge particles WITHOUT removing protective additives! Now—for the first time—you can STOP abrasive-laden oil from grinding away cylinder walls and precision parts—ending the biggest cause of costly repairs!

THE SECRET

of the improved Life-Time's amazing efficiency

Oil is forced through millions of tiny metal "balls"...a wall of porous-bronze! All harmful particles—small as 39 millionths of an inch—are "screened-out," drop to bottom of case in the form of dirty sludge. Because LIFE-TIME is all-metal, it cannot absorb additives...nor can oil force "channels" through it. Only clean, additive-retaining oil enters your engine!



INSTALL IT YOURSELF IN 5 MINUTES!

Even easier to install than filter packs! Simply remove old "pack"—slip in new porous-bronze element—replace cover. Simple instructions included.

DON'T CONFUSE the improved Life-Time with other so-called permanent filters!

Insist on the new cylindrical LIFE-TIME Filter Element. This Improved, "fixed porosity" unit has greater continuous filtering capacity than any other filter. Also, it is the only metal filter where ONE model fits almost all cars and light trucks.

THEY SAID IT COULDN'T BE DONE—BUT WE DID IT!

...perfected an improved CYLINDRICAL element with far greater structural strength and filtering area than any automotive bronze filter yet developed! To confirm the findings of our engineering staff, we submitted our new cylindrical filter—together with current models of all other bronze automotive filters—to an independent laboratory for impartial tests. Results proved conclusively that the new cylindrical Life-Time Filter withstands up to 63% more actual pounds of oil pressure than the best of all others tested.

UNPRECEDENTED GUARANTEE

IMPROVED LIFE-TIME FILTER is unconditionally guaranteed for 10 full years. In addition, we Guarantee Double Your Money Back if the Perma-Bronze cylindrical Element develops any sign of structural weakness.

COMPARE THESE total savings using an improved Life-Time filter...

	You Save In 1 Year	You Save In 3 Years	You Save In 5 Years
OIL CHARGES	\$26.40	\$79.20	\$132.00
FILTER PACK REPLACEMENT		13.35	27.85
MOTOR OVERHAUL	?	?	100.00
TOTAL SAVINGS	\$26.40	\$92.55	\$259.85

*CARS REQUIRING FULL-FLOW TYPE...These only: Buick V-8; Olds V-8; Ford '6" '52-'54; Ford V-8 '54; Mercury '54; Lincoln '52-'54; Chrysler '46-'54.

DEALERS — JOBBERS!

Help us fill the demand! Share in this great discovery. The Improved LIFE-TIME (Pats. Pend.) is the only metal filter element that comes in one Model for popular cars, instead of 20 to 30. Solves stocking problems! Write today on your letterhead for complete details, large color brochure.

ORDER NOW... SENSATIONAL

10 DAY FREE TRIAL! Try, test, compare this amazing filter for 10 full days. Then, if you're not 100% convinced it's everything we say and more, just send it back for prompt, full refund! No questions asked.

ENGINE PRODUCTS MFG. CO.

5801 E. Beverly Blvd., Dept. 243
Los Angeles 22, California

- ☐ Rush Life-Time Filter Element at \$6.95
- ☐ Rush Complete Filter Unit (Incl. Case) at \$12.95
- ☐ Rush "Full-Flow" Type Filter Element at \$11.95
- ☐ Enclosed is \$_____ full price, ship fully postpaid.
- ☐ Enclosed is \$2.00 Deposit—ship C.O.D., plus postage.

GENTLEMEN: Please send me filter(s) checked at left. I understand that if I am not completely satisfied I may return for full refund within 10 days.

CAR YEAR _____ MAKE _____ MODEL _____

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

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